AMERICAN GAS JOURNAL

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FEBRUARY 1942

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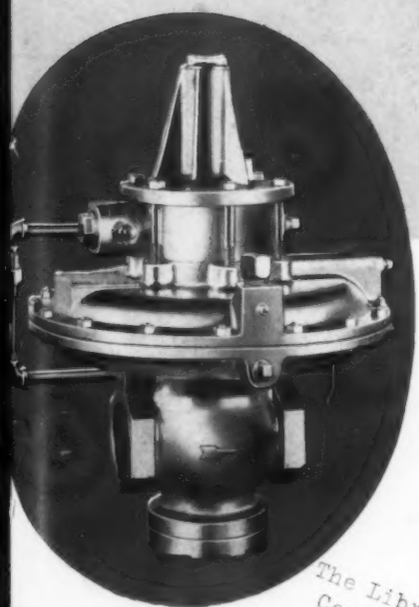
EMCO "1001" Regulator



TRUE to its name, the EMCO "1001" Regulator is designed to adequately handle a thousand and one types of control problems. This regulator will serve all installations requiring both small and large flow rates, where supply pressures range upwards to 150 lbs. per sq. in., and must be reduced and accurately held to pressures of 20 lbs. per sq. in. or less.

These pressure ranges will be encountered in many industrial and commercial burner applications, at meter settings, on small town border stations and district systems. The excellent performance of the EMCO "1001" Regulator is the result of new design principles combined with features of construction which represent very decided advancements. Even its appearance bears witness of its merits and quality because it is carefully proportioned, simple, compact, yet rugged and thoroughly reliable in every detail. All parts of this regulator are based on the latest and most improved designs and are constructed of materials best suited to their respective purposes.

A comprehensive bulletin, No. 1059, making use of four-color sectional diagrams to illustrate the operating principle, will be sent upon request.

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PITTSBURGH EQUITABLE METER COMPANY

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Joints that don't require skilled workmen

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Pipe bearing this mark is cast iron pipe

TRADE MARK REG.

Available in diameters from 1¼ to 84 inches.

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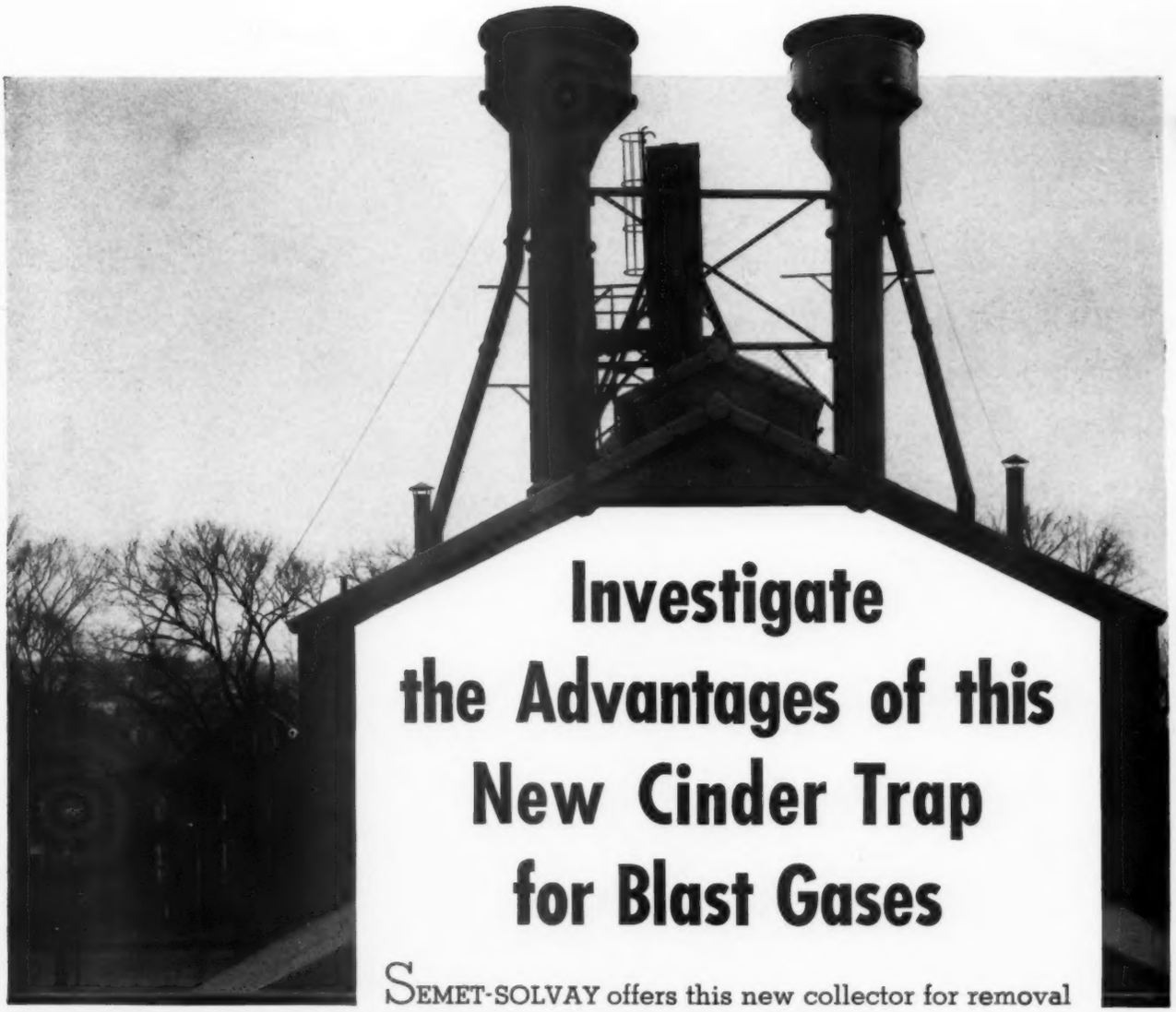
THOMAS F. WOLFE, RESEARCH ENGINEER,
1015 PEOPLES GAS BUILDING, CHICAGO, ILL.

CAST IRON PIPE

THE STANDARD MATERIAL FOR UNDERGROUND MAINS



Investigate the Advantages of this New Cinder Trap for Blast Gases

SEMET-SOLVAY offers this new collector for removal of dust and cinders from blast gases.

■ It is completely shop built and easily erected—simple in design, sturdy in construction, effective in operation and moderate in cost.

■ The installation shown of two Semet-Solvay Dust Collectors is in a New England water gas plant located in a residential section, where they have overcome an objectionable condition.

■ Send for further details and a proposal which will enable you to appraise the benefits of this equipment to your plant.

SEMET-SOLVAY
ENGINEERING CORPORATION
Engineers ▾ ***Contractors***
40 RECTOR STREET ▾ **NEW YORK, N.Y.**

AMERICAN GAS JOURNAL, February, 1942. Vol. 156, No. 2. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 53 Park Place, New York, N. Y. Entered as second-class matter, October 7, 1928, at the post-office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U. S. A.

Carrying forward the story of GAS REFRIGERATION in 1942 › › › › ›

During the coming months (and very eventful months they may be) Servel advertising will continue to focus the spotlight on Gas Refrigeration in the pages of national magazines.

Advertisements, like the one shown here, have been designed to drive home—in a vivid and memorable way—the message of Servel's silence, long life, and exclusive "no moving parts" freezing system.

These advertisements employ the popular picture-story technique, which surveys show wins highest readership. They tell a human-interest story that starts with a dramatic situation and carries through to a happy conclusion.

At no time has it been more important than it is now to keep people reminded of the products you sell, the services you render. In 1942, Servel advertising will do its part in keeping Gas and Gas Refrigeration to the forefront of the public mind.

THE SATURDAY EVENING POST

Men like the quiet type!..

1 Everything's hunky-dory with Bill and me. But it wasn't always that way. Fact is, we were passing jumps as cars. Every time our old refrigerator would start up, a spat was in the offing. "It's your nerves," said Bill. "It's the noise," I told him.

2 But things got no better. Then one night, Bill and bell joking. "I have the answer. The hammock for me. It's cheap and peaceful out there." It didn't take much to persuade him that the hammock was definitely on the answer. But, secretly, I was worried sick.

3 Next day, I went over to see my friend, Sue Chapin. "What'll I do?" I asked her. "Do?" she demanded. "Get rid of that rumpus-raising refrigerator. Buy the quiet type. Men get enough noise all day. Just listen to my Servel!"

IT FREEZES WITH NO MOVING PARTS!

4 I couldn't get Bill to the Gas Company fast enough. "Imagine!" I said, "you can't hear a sound with Servel." Bill was skeptical. But not for long. The salesman showed him how a tiny gas flame takes the place of moving parts that cause noise and wear.

5 "Say, mister," smiles Bill, "you've got something here." What memories we've been. Thinking all along that all refrigerators had to be the same." Right then and there, we made up our minds to live in peace and quiet with a Servel!

NO MOVING PARTS in Servel's freezing system means NO MOTOR OR OTHER MOVING PARTS

SERVEL ELECTROLUX GAS REFRIGERATOR

STAYS SILENT LASTS LONGER

MORAL: If you look at one refrigerator, look at Servel. If you look at more than one, look at Servel to see the difference.

FOR FARM AND COUNTRY HOMES—BOTTLED GAS—TANK GAS—KEROSENE

BOTTLED GAS—TANK GAS—KEROSENE

The Gas Range

A VITAL ESSENTIAL TO AMERICAN FAMILY LIFE

Universal with its advanced devices aids in correcting vitamin deficiency . . .

☆ Good food is a necessity in the building of a stronger nation . . . And, food is only *good* when it has been properly prepared. Thus, the gas range and healthful food preparation now play more important roles than ever before.

The modern Universal Gas Range protects healthful food qualities and safeguards full food values. Protein and other soluble health essentials are preserved through the use of minimum amounts of water for top burner cooking the Simmer-Save way. The Universal Precision Oven guards against excess loss of soluble

nutrients by making it possible to roast foods in an open pan without continually adding water . . . And, the Universal In-A-Drawer Broiler offers new ease and safety in the preparation of healthful broiled foods.

Fats, carbohydrates, minerals and the many different vitamins are affected by excess amounts of water—improper heat distribution—and uncontrolled temperatures. Universal automatically controls these factors, and assures healthful results in every phase of cooking.

CRIBBEN & SEXTON COMPANY
MANUFACTURERS OF UNIVERSAL GAS RANGES
700 NORTH SACRAMENTO BOULEVARD
CHICAGO • ILLINOIS

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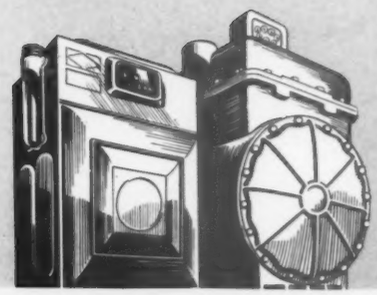
Laboratory controlled ... precision built



GENERAL OFFICES • 60 EAST 42ND STREET, NEW YORK, N. Y.

AMERICAN METER COMPANY

INCORPORATED (ESTABLISHED 1836)

FEBRUARY
1942

AMERICAN
GAS JOURNAL

VOLUME 156
No. 2

Tongue Wagging

Back in the almost forgotten days of the "Gas House Gang," when gas making was listed as one of the "Black Arts," several gentlemen of Irish birth, whose common occupation was stoking retorts, had a slight disagreement. Being Irish, they settled the difference in the good old Irish way, and were still at it when the police arrived and spoiled it all.

Mike, another gentleman of the same nationality, was called as a witness. Depending on the point of view, he was a wonder or a flop. The sphinx had little on him. There had been a bit of a mix up, he finally admitted; but essentially he had seen nothing, heard nothing and he knew nothing.

The prosecuting attorney at last became exasperated and suspicious that there was some strong bond between Mike and the least battered defendant.

"Mike," he said, "will you tell the Court whether you are a member of any secret organizations?"

"Yis, sor!"

"Well, *are* you?"

"Yis, sor!"

"How many?"

"Two."

"Will you tell us what they are?"

"Yis, sor!" Still giving no more information than obliged to.

"Well, what *are* they?"

"Th' Knights o' Columbus an' th' Gas Company."

Last week a member of the *Journal* staff was travelling on a train. Behind him were two men. Quite clearly the railroad had missed a bet when it failed to draft one of these as a train announcer. He had that kind of a voice. He was a wise guy and a member of the well known species of tongue waggers. He knew everything that was confidential with respect to the conduct of the war. Troop movements, ship movements, military plans, everything. He considered himself an important and well informed person; and he took care that he talked loud enough so that all those nearby, in addition to his companion, would be duly impressed. The worst part of it was that at least some of his information was probably correct.

Having evidently noticed that the member of our staff displayed some interest in his broadcast, the loud mouthed one approached him later at the hotel with the evident intent of offering some particularly confidential bit to do the job up brown. But the reception he got caused him to beat a hasty retreat, probably a little afraid that his next engagement might be with the F.B.I.

Had some of the things this man said been overheard by an agent of the enemy, it is quite conceivable that very serious harm might have resulted.

Almost every one of us gets information from time to time that would be useful to the enemy. We in the gas industry are living with such information from day to day. Gas is essential in the national war effort. We have contacts with industries directly engaged in war work, and necessarily gain much important knowledge of their operations. Our own plants and systems are hardly less important.

A few ill advised, careless words, and a ship is sunk or a plant is set on fire or blown up. Is it not worth more to feel that your care and self restraint is helping to insure the safety of your countrymen than to gain a questionable prestige by impressing others with the fact that you are on the inside?

What should you avoid talking about? Primarily the answer is, use common sense. What information would the enemy like to have? Then avoid all mention of it.

More specifically:

(1) Don't talk about your work or the plant where you work in public places. Don't say whether gas output is increasing or decreasing, what plant is changing over to gas or anything specific.

(2) Avoid talk that would enable any unauthorized person to locate any particular piece of apparatus, any valves, mains, governor stations, etc.

(3) Keep main maps and particularly photographs where there is no chance of their falling into unauthorized hands. Aerial photographs should be kept under lock and key in most instances.

(4) Avoid public mention of troop movements, ship movements, military plane strength or production, fortifications, and of the work of your industrial and commercial customers.

(5) Urge all employees to follow the practice of self censorship.

This is our war, and every one of us wants to help win it. It is a small sacrifice to forego the satisfaction of impressing our fellows with some piece of "confidential" information, which may have sufficient truth in it to be very helpful to the enemy.

Remember that a gas company in times gone by was in fact a pretty secret organization. Even today we speak of the "gas fraternity." We have a tradition to maintain.

We can all do well to hark back to the ideals of the tight-lipped, hard hitting, loyal members of the "Gas House Gang." To them satisfaction came not in impressing others by broadcasting what they knew, but in knowing things that the outsider did not know, and no person on God's Green Earth could pry out of them.

Defense Savings Pay-Roll Allotment Plan

How company heads can help their country, their employees, and themselves

voluntary pay-roll allotment plan

helps workers provide for the future

helps build future buying power

helps defend America today

This is no charity plea. It is a sound business proposition that vitally concerns the present and future welfare of your company, your employees, and yourself.

During the post-war period of readjustment, you may be faced with the unpleasant necessity of turning employees out into a confused and cheerless world. But you, as an employer, can do something *now* to help shape the destinies of your people. Scores of business heads have adopted the Voluntary Pay-roll Allotment Plan as a simple and easy way for every worker in the land to start a *systematic* and *continuous* Defense Bond savings program.

Many benefits . . . present and future. **It is more than a sensible step toward reducing the ranks of the post-war needy. It will help spread financial participation in National Defense among all of America's wage earners.**

The widespread use of this plan will materially retard inflation. It will "store" part of our pyramiding national income that would otherwise be spent as fast as it's earned, increasing the demand for our diminishing supply of consumer goods.

And don't overlook the immediate benefit . . . money for defense materials, quickly, continuously, *willingly*.

Let's do it the American way! **America's talent for working out emergency problems, democratically, is being tested today. As always, we will work it out, without pressure or coercion . . . in that old American way; each businessman strengthening his *own* house; not waiting for his neighbor to do it. That custom has, throughout history, enabled America to get things done *of its own free will*.**

In emergencies, America doesn't do things "hit-or-miss." **We would get there *eventually* if we just left it to everybody's whim to buy Defense Bonds when they thought of it. But we're a nation of businessmen who understand that the way to get a thing done is to *systematize* the operation. That is why so many employers are getting back of this Voluntary Savings Plan.**

Like most efficient systems, it is amazingly simple. All you have to do is offer your employees the convenience of having a fixed sum allotted, from each pay envelope, to the purchase of Defense Bonds. The employer holds these funds in a separate bank account, and delivers a Bond to the employee each time his allotments accumulate to a sufficient amount.

Each employee who chooses to start this savings plan decides for himself the denomination of the Bonds to be purchased and the amount to be allotted from his wages each pay day.

How big does a company have to be? **From three employees on up. Size has nothing to do with it. It works equally well in stores, schools, publishing houses, factories, or banks. This whole idea of pay-roll allotment has been evolved by businessmen in cooperation with the Treasury Department. Each organization adopts its own simple, efficient application of the idea in accordance with the needs of its own set-up**

No chore at all. **The system is so simple that A. T. & T. uses exactly the same easy card system that is being used by hundreds of companies having fewer than 25 employees! It is simple enough to be handled by a check-mark on a card each pay day.**

Plenty of help available. **Although this is *your* plan when you put it into effect, the Treasury Department is ready and willing to give you all kinds of help. Local civilian committees in 48 States are set up to have experienced men work with you just as much as you want them to, and no more.**

Truly, about all *you* have to do is to indicate your willingness to get your organization started. We will supply most of the necessary material, and no end of help.

The first step is to take a closer look. **Sending in the coupon in no way obligates you to install the Plan. It will simply give you a chance to scrutinize the available material and see what other companies are already doing. It will bring you samples of literature explaining the benefits to employees and describing the various denominations of Defense Savings Bonds that can be purchased through the Plan.**

Sending the coupon does nothing more than signify that you are anxious to do *something* to help keep your people off relief when defense production sloughs off; *something* to enable *all* wage earners to participate in financing Defense; *something* to provide tomorrow's buying power for your products; *something* to get money *right now* for guns and tanks and planes and ships.

France left it to "hit-or-miss" . . . and *missed*. *Now* is the time for *you* to act! Mail the coupon or write Treasury Department, Section A, 709 Twelfth St. NW., Washington, D. C.

FREE - NO OBLIGATION

Treasury Department, Section A,
709 Twelfth St. NW., Washington, D. C.

Please send me the free kit of material being used by companies that have installed the Voluntary Defense Savings Pay-Roll Allotment Plan.

Name _____

Position _____

Company _____

Address _____

GPO 428498

Gas in the Douglas Aircraft Factory

By
Fred A. Herr
Los Angeles, California

EIGHT MILLION cubic feet of gas per month are required for industrial air conditioning, processing and manufacturing purposes in the Douglas Aircraft Co.'s new $12,000,000 blackout factory in Long Beach, Calif.

Approximately 4,000,000 cubic feet (50% of the total gas requirements) is allocated to the industrial air conditioning and gas heating system which serves the manufacturing, assembly, warehouse and receiving units. The administration, office, personnel and commissary buildings are supplied with commercial gas service amounting to 3,000 MCF per year. These latter include gas for heat treating, metal melting, paint drying, blue print machines, gas engine driven compressor units, die forging machines, cleaning and rinsing tanks in electroplating and metal finishing operations, and various other purposes. In processing duraluminum, for instance, which is used extensively in airplane construction, non-ferrous metal is heat treated in large gas-fired furnaces.

The gas engine compressors in the Douglas plant are heavy-duty Ingersoll-Rand engine compressor units of 325 h.p. Two units of that rating have already been installed. The air compressors use direct-connected pressure to actuate various types of presses and low- and high-speed machine tools.

In order to insure the operation of the plant under practically any conditions, utilities such as gas, water and electricity are supplied from two separate sources. Each service is capable of supplying the entire plant independently of the other systems.

The Office Building, Personnel-Welfare Building and the Cafeteria or Commissary Building are supplied on the commercial gas rate as is also the gas supply for heating water in the commissary. The other buildings are supplied at the industrial gas rate, which is a combination of firm-gas and surplus industrial rate.

Prior to the start of construction in November, 1940, the site of the plant was practically pasture land. All utilities had to be installed, including more than 11,000 feet of all welded gas main.

The buildings were officially dedicated on October 17, 1941, in the presence of Army Air Corps and naval aviation officers, Douglas executives and Long Beach and Los Angeles civic leaders.

The Long Beach Douglas plant has attracted international attention because of its "blackout" features and the windowless design of the buildings. The blackout features were designed specifically for this plant. The buildings are entirely windowless. The proscription against light-emitting openings pertains even to skylights. Doors and trucks and rail car entrances are fitted with light traps or double-door arrangements to prevent the escape of light. All structural features of that nature have been incorporated to assure a complete blackout in case of emergency. They make it possible to render the plant invisible from a passing plane at night. Other features of a protective nature are completely flat-topped roofs devoid of light-reflecting surfaces, and a color scheme which calls for a dull black exterior of all walls and roofs. Wide open spaces separate all units.

The buildings are so large that heating became one of the major considerations. The factory and warehouse buildings are one story high; some of the administrative units are one to three stories in height.

Sidewall construction of the factory units is two-ply. An inner layer of Thermax slabs is used for insulation with an exterior covering of asbestos protected steel siding. Thermax also is placed beneath the roof decks of the factory buildings. The composition of the insulating slabs —shredded wood fiber and cement binder—dictated their use for sidewalls and roofs. The slabs, it is claimed, will shatter without forming into large chunks.

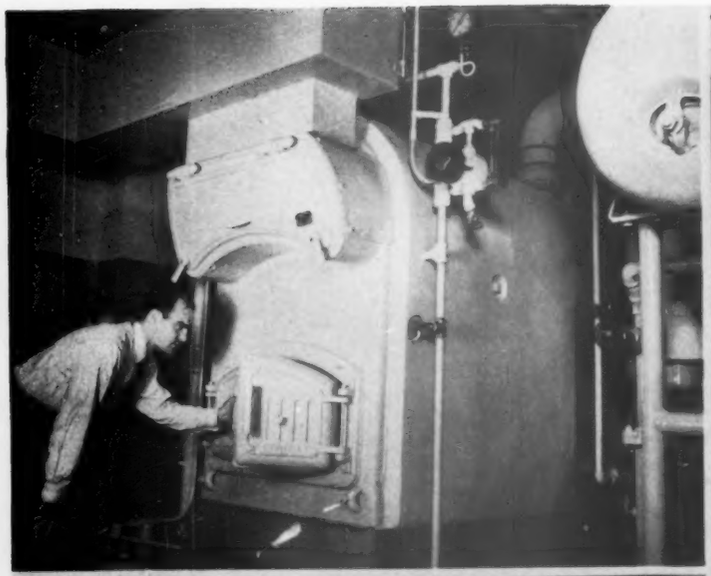
In designing the heating system, the foremost consideration which confronted the engineers was the decentralized theme which keynotes the layout of the plant. The aim of the planners was to make each building completely independent of the others insofar as industrial air conditioning was concerned. This plan was developed to the extent of providing separate heating and cooling systems not only for the individual buildings, but the unitory idea of installation was carried farther by segregating the heating and cooling arrangements for each building into single units for servicing specified sections of a building.

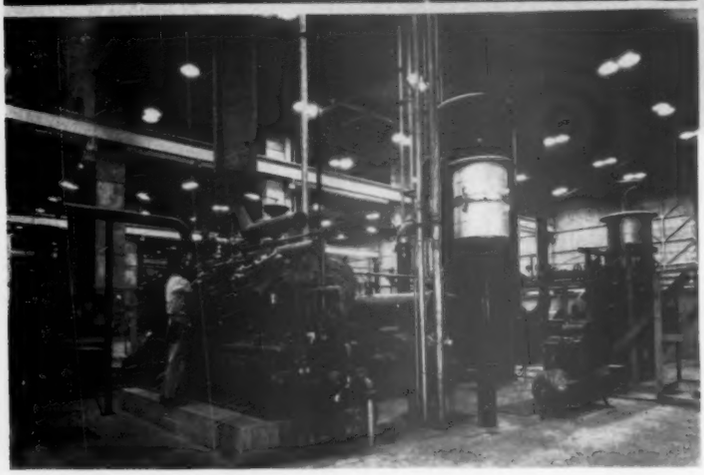
The result is that the heating system has been decentralized on a scale that is probably the most extensive adaptation of that principle of industrial plant heating on the west coast. There are two gas-fired, low-pressure steam systems. One operates at 15 pounds pressure, the other at five pounds. Both systems use Kewanee gas-burning boilers manufactured by the Kewanee Boiler Corp. The entire factory contains a total of 23 gas boilers rated at a total of 254,540 E.D.R. Twenty-two of the boilers operate on the 15-pound system. Expressed in terms of B.T.U., the individual boilers have ratings ranging from 940,000 to 4,372,800 B.T.U., for a total of 61,089,600 B.T.U.

The 23 boilers are set up in 23 boiler rooms. The larger fabrication and assembly buildings have three boiler rooms each with a gas-burning Kewanee in each boiler room. Total boiler rating in two of the largest buildings, which have three boilers each, is 30,370 E.D.R. In two buildings next largest in size, three boilers in three boiler rooms aggregate 30,390 E.D.R. Correspondingly lower ratings are found in the boiler installations in smaller buildings.

A separate five pound low-pressure system has been installed for heating a garage and a Paint Storage Building. One Kewanee gas-burning boiler (18,220 E.D.R.) in a boiler room in the garage building heats that building and, by means of heat pipes carried through a connecting tunnel, also supplies the heating requirements of the Paint Storage Building.

Diffusion of heated air in the factory buildings is linked with the refrigerated air conditioning system. With all buildings being windowless, thus eliminating the customary fresh air and light inlets, air cooling and





1—A series of 23 gas-fired Kewanee boilers of the type illustrated here are part of a decentralized heating system which embraces 23 separate boiler rooms. The plant's industrial air conditioning system consumes 4,000,000 cubic feet of gas per month.

2—Shown here is a striking view of the platform system used for mounting air conditioning units, heat coils, fans and other equipment of the conditioning system. Sixty-two platforms of this type are mounted in the roof trusses of the various factory buildings. Portion of one of the catwalks which connect the platforms for convenience of servicing are shown center-left and top.

illumination on a scale many times greater than in industrial buildings of conventional design was required. The great number of lighting fixtures in the windowless structures also influenced the size and type of the cooling and heating system. The radiation of 15,000 fluorescent fixtures in the office buildings, which are in operation in the windowless plant even at midday, and 10,000 400-watt mercury-vapor lamps in the factories had to be off-set by refrigerated air handling.

The air conditioning system also conforms to the decentralized theme. The buildings in which refrigeration machinery is installed contain a total of 68 Freon direct expansion air conditioning units. Each unit is complete in itself for serving an individual zone. Tonnage averages 60 tons per unit for a total tonnage of 4,000. Sixty-two units are distributed about the factory buildings and six units in the office buildings.

Most interesting angle from a heating and cooling engineering standpoint is the manner in which the air conditioning units, heating coils and fans have been installed to leave all the working area unencumbered. Heat coils, booster coils, fans, compressors, condensers, cooling coils and filter banks for the units are installed on platforms in the roof trusses of the factory buildings. The platforms average 20 x 25 feet in size. Distance from the under side of the platform to the floor of the building varies: 30 feet in some buildings, 35 feet in others. On each platform a heating coil is installed in front of the air intake and a booster coil in the supply duct to the outside zone. A fan—varying in size at the respective stations but ranging to a maximum of 35,000 C.F.M., is part of each platform setup.

Heated or cooled air, according to seasonal requirement, is ejected from the factory units through double adjustable directional flow grilles. The grilles are mounted in the ducts at the bottom of the truss cord and expel directly downward toward the working level. A problem of stratifying heated air at factory working levels in the heating season was solved effectively by installing a return duct at each platform, with a drop to within seven feet of the floor of the building.

The units in the office buildings are not mounted in roof trusses, but in what corresponds to attic space above the ceilings. The upper-floor mounting and the unitory idea, however, are also carried out in those buildings. The Administration Building, for instance, is equipped with three fan stations and three refrigeration units with a capacity of 227 tons of refrigeration. Air in those buildings is expelled through Barber-Colman Venturi-Flo outlets set in the ceiling. Heat coil and booster coil arrangements are similar to those in the factory building installations.

Heating installations in the Paint Storage and Garage Buildings are on platforms. In the Paint Storage Building, Trane ceiling projection heaters are used in connection with

Gas is used for many purposes in the manufacturing and processing activities of the Douglas plant. In Figure 3 is shown one of the large heavy-duty Ingersoll-Rand gas engine compressors used to actuate presses and machine tools. In Figure 4 is shown the line-up of air-operated hammers used for production of sheetmetal airplane parts, which are supplied with compressed air from gas engine compressors.

Gas heated melting furnaces are used for various metal treating purposes in the new Douglas plant. In Figure 5, lead zinc alloy is being poured from a gas-heated furnace into a bucket which an overhead traveling conveyor will move to the foundry for pouring into die molds.

nozzles in the ducts for directional distribution of hot air. Buffalo heaters, with direction louvres, constitute the equipment in the Garage Building. These two buildings, as well as the Warehouse Building, are equipped with platform heat ejection facilities, with provision for ultimate installation of air cooling machinery.

The Douglas plant was built under high speed. For that reason air conditioning equipment was supplied and installed by several manufacturers and contractors. The 68 conditioning units are direct expansion Freon systems featuring York and Westinghouse vibrationless reciprocal compressors specially designed for upper-floor mounting. Thirty-five units were supplied by the Westinghouse Co. and 33 by the York Corp. The Westinghouse equipment consists of Type CLS 2550 Freon-12 compressors and Type CLS 1980 compressors. The evaporative condensers by Westinghouse are Type EV-1700 and EV-1320. The units average 50 to 70 H.P. The York setups are equipped with 60 H.P. V/W compressors and stagger-tube Freon-12 direct expansion coils. Staynew filters are used in the factories and warehouse units, and American filters in the other buildings. The Buffalo Forge Co. supplied the main supply fans, one of which forms part of the equipment of each of the 68 conditioning units.

A convenient system of catwalks has been installed to expedite servicing the platform machinery and lighting system. The catwalks are three feet wide. They lead from one platform to another, completely connecting the various truss-mounted stations in each building and making it unnecessary for service men, working on coils, fans, refrigeration units, lights or cranes, to descend to the floor.

The system cools the factory buildings to 80 degrees Fahrenheit dry bulb and 48% relative humidity, and the other buildings to 78 degrees Fahrenheit dry bulb and 50% relative humidity.

Designer of the heating, ventilating and air conditioning system was O. W. Ott of Los Angeles. Cost of the installations was in excess of $1,000,000. Construction of the Douglas factory was carried out by the Walker Construction Co. of Los Angeles from designs by Edward C. and Ellis W. Taylor, Los Angeles, the supervising architects and engineers.

The gas boiler plant and piping systems were installed by W. S. Kirkpatrick Co. of Los Angeles. Heat coils and various other portions of the heating system were installed by Western Air Refrigeration, Inc., and the plumbing and heating department of the Walker Construction Co. Installation of air conditioning refrigeration equipment was divided among Western Air Refrigeration, Inc., York Ice Machinery Corp. (Los Angeles Branch), and E. S. Kilpatrick Co.

Production of airplane parts and assemblies began in the plant several months before the official dedication took place. As soon as roofs and walls were up in June, some 2,000 men were put to work in the larger assembly buildings, while designers and office staffs took over the warehouse building for temporary quarters.

By mid-August nearly 5,000 Douglas employees had moved into their permanent quarters. This figure has already soared, and will eventually triple or quadruple.

Buy DEFENSE SAVINGS BONDS and STAMPS

AT ALL BANKS, POST OFFICES, AND SAVINGS AND LOAN ASSOCIATIONS

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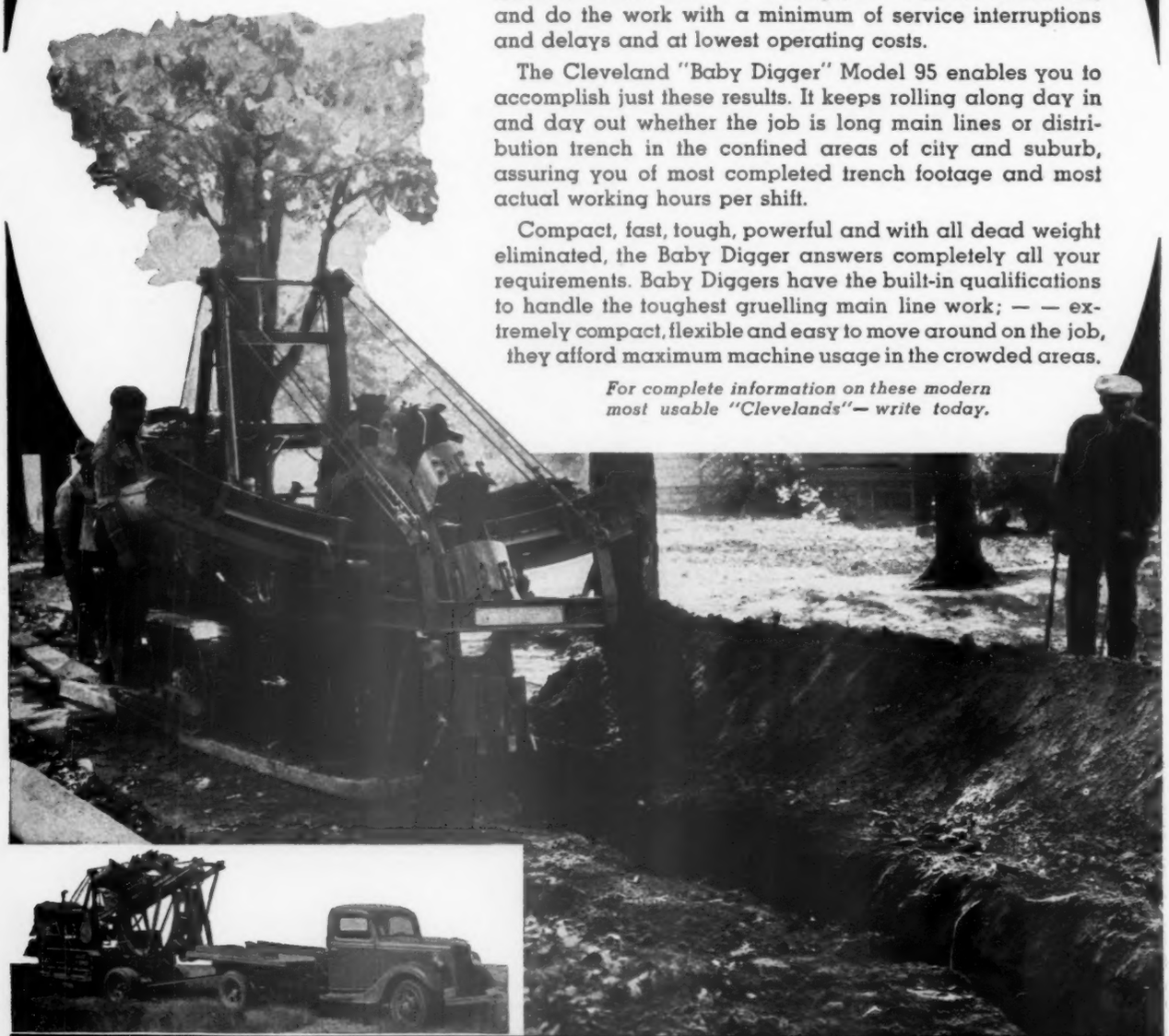


THE CLEVELAND TRENCHER COMPANY

"Pioneer of the Small Trencher"

20100 ST. CLAIR AVENUE CLEVELAND, OHIO

National Defense and The Gas Industry, Part 2

S. J. BEALE
Photo, Blank & Stoller

By
S. J. Beale
General Manager
West Gas Improvement Co., Inc.

(The following list of references, which formed a part of Mr. Beale's paper, published in the January issue of the JOURNAL, is of such importance that we are printing it in full.—Ed.)

The following References include those available at the British Library of Information, Rockefeller Center, New York City.

"B.L.I." denotes the British Library of Information number for purchasers, the title must also be given.

I have listed those which appear to me to be of interest to men in the Gas Industry and have included in the first list those that may be of greatest interest. This is followed by a list set up under various headings.

Those marked by an asterisk are mentioned in the paper, but where the paper includes the essential information it is not repeated here, nor is the title or number given.

Information available at The British Library of Information New York City

A.R.P. Memorandum C

C1 A.R.P. for Gas Undertakings
C2 A.R.P. for Electric Undertakings
C3 A.R.P. for Water Undertakings
are not permitted to be sold, and are *not* available at the British Library of Information in New York, but the information contained in "C1 A.R.P. for Gas Undertakings" is pretty well covered in other literature which is available.

Civil Defense Act, 1939—60c—B.L.I. No. 231

Employers of 30 or more required to provide Air Raid Shelters. Public Utilities not liable for damage to their underground equipment caused by Air-raid shelter builders, are required to provide for air-raid shelters for their employees and for continuity of service.

Public Utilities must dim certain lights, eliminate plant glare, may be required to camouflage and may obtain financial assistance from the government.

Central Electric Board may distribute certain costs among Electric Plants.

A.R.P.

What You Must Know, What You Must Do, 1940—10c—B.L.I. No. 122

Chapter 1—The Civil Defense Services—Organization

Chapter 2—Self-Protection against High Explosive Bombs, and Behavior during a raid
H. E. Bombs and their effects
The Importance of Shelter
Provision of Refuge in the House
Protection of Windows and Doors and photo
Provision of a Shelter outside the House
Types of Shelters independent of Buildings and photos
General Notes on Shelters
Action to be taken on the sounding of a Warning and behavior during an air raid
After the raid
Chart of casualties of persons standing, lying in street and in shelters, etc.

Chapter 3—Incendiary Bombs

Incendiary Bombs and their characteristics—with photos and diagrams of bombs, handling equipment, etc., and escape from burning house.
Precautions to be taken in advance

Chapter 4—War Gases

The nature of War Gases
Non-persistent Gas
Persistent Gas
Effects of War Gases on the body
Contamination
Gas Attacks
Behavior of Gas
Respirators for the General Public
The Civilian Respirator and photos
The small child's respirator and photo
The baby's protective helmet and photo
Use and care of respirators and photos
Treatment to Prevent Misting of Eyepieces
Carriers for the Civilian and Small Child's Respirators and photo
Decontamination of Contaminated articles of personal apparel

Chapter 5—Simple First Aid

Introductory
Wound Shock
Bleeding (Hæmorrhage)
Fractures and photos of artificial respiration
Unconsciousness (Insensibility)
Suffocation (Asphyxia)
Removal from Electrical Contact
Burns (other than from Gas) and scalds
Gas Casualties
Summary

Notes on Improvised Splints with diagrams.

Appendix—Table of War Gases—properties, odor, effect upon human body, general function of gases

***Handbook No. 11 — Camouflage of Large Installations, 1940 — 15c — B.L.I. No. 95**

Of general interest, but there is probably available information in more detail concerning Gas Industry plant and equipment.

Memorandum No. 2—Rescue Parties and Clearance of Debris, 1940—5c—B.L.I. No. 98

General interest as to organization.
Public Utilities to be informed of shut-offs, etc., and are responsible for repairs.

Memorandum No. 12—Protection of Windows in Commercial and Industrial Buildings, 1940—10c—B.L.I. No. 108

Protection is to avoid damage to contents of rooms.
Effects of High Explosive Bombs—near and distant.
Various types of materials used for blocking up windows, with drawings.
Various types of tapes and glues for use on window glass, with drawings.
Important if bombings expected.

Handbook No. 9—Incendiary Bombs and Fire Precautions, 1940—15c—B.L.I No. 93

Why civilians must help to put out incendiary bombs.
Various types of bombs, method and effect of attack, government protective tests and flame resisting paints.
Personnel and equipment required to combat incendiaries, fire fighting hints and personal conduct in smoke filled and weakened structures, first aid.
Demonstrations and practices, transportation and storage of incendiaries.
Emergency precautions in Industrial and Commercial premises.
Penetration trials on various materials and recommendations.

Appliances for Fire parties, drills and instructions for attacking a fire.
List of Trades and Occupations with high fire risk.

***Civilian Duty Respirators fitted With Microphone Attachments, 1939—5c—B.L.I. No. 78**

Special plug and socket used.

Memorandum No. 16—Emergency Protection in Factories, 1940 — 5c — B.L.I. No. 112

Lateral protection to machinery required.
Roof reinforcement may be necessary.
Multi-storied steel or reinforced concrete buildings are inherently resistant to air attack.
Floors may need additional strengthening.
Air raid shelters required for employees.
How to protect roof glazing.

Memorandum on Emergency Water Supplies for Fire Fighting, 1939—10c—B.L.I. No. 176

Augmenting existing water supply and distribution.

War Time Lighting Restrictions for Industrial and Commercial Premises, 1939—5c—B.L.I. No. 153

Screening materials for darkening—black, brown, green or blue are suitable.
Treating existing non-opaque materials to make them opaque.
Screens.
Paints.
Roof Lights.
Doorways.
Shading of lamps.

Lights Carried by Road Vehicles, 1940—5c—B.L.I. No. 154

General restrictions, including wattage, masking of lights and etc., with diagrams.

Wartime Building Bulletin No. 1—Economical Type Designs in Structural Steelwork for Single Story Factories, 1940—30c—B.L.I. No. 183

Suggestions with design data and diagrams.

Wartime Building Bulletin No. 2—The Application of Reinforced Concrete to Wartime Building, 1940—15c—B.L.I. No. 184

Steel economy possibilities.
Economical use of steel in Reinforced Concrete.
Design Features Affecting Formwork Conservation.
Early stripping to conserve formwork.
Summary and Recommendations.

Wartime Building Bulletin No. 9—Conservation of Cement and of Clay Bricks, 1940—30c—B.L.I. No. 191

Reduction of Quantities.
Alternative Materials.

Building Bulletin No. 10—General Principles of Wartime Building—30c—B.L.I. No. 192

Reinforced concrete is not so good and steel is better, preferably with paneling and no more bonding than is essential. Where members, including roof trusses, tie into external building members, connections should be very strong to prevent shearing in the event of a direct or near hit as column bases may move 4"-5". Encase columns in brick or concrete, but do not bond to steel.

Wartime Building Bulletin No. 13—The Fire Protection of Structural Steelwork, 1941—30c—B.L.I. No. 193.2

Assessing the Degree of protection required.
The Protection of Structural Steelwork and Columns and Trusses and Timber Floors with diagrams.
Test times and temperatures—
30 minutes—843° C.
1 hour—927° C.
6 hours—1,204° C.

Building Bulletin No. 14—Centerless Arch Designs—30c—B.L.I. No. 193.3

Doweled blocks keyed together to save wood for centering, minimizing or eliminating steel. They are sprung from a concrete base and can be made from suitable materials at the point they will be used. Making and erecting is done by semi-skilled labor.

A.R.P.

Organization of Air Raid Precautions Services in Industrial, Etc., Undertakings and the Training and Equipment of Personnel—10c—B.L.I. No. 143

Where there are 250 people an organization requires an A. R. P. scheme with one man in control and one additional warden per 50 people. With 500 people there must be a control post, first aid and decontamination accommodations.
At least 10% of those employed must be trained in First Aid, dealing with effects of gas and fire fighting.

Organization of Air Raid General Precautions, 1939—5c—B.L.I. No. 68

Legislation.
Distribution of duties to departmental officers.
Administration in Counties.
Use of the general county (tax) rate for costs.
Enrollment of Volunteers.
Training.
Warden's organization.
Air Raid warnings—signals.
Equipment.
Execution of Shelter Policy.

Memorandum No. 1—Organization of Air Raid Casualty Service, 1940—15c—B.L.I. No. 97

Outline of organization in Rural and Urban areas with layouts of first aid stations and gas decontamination rooms—some from converted concert and dance pavilion; sports pavilion.

Memorandum No. 6—Local Communications and Reporting of Air Raid Damage, 1939—15c—B.L.I. No. 102

Principles, methods of communication—mostly telephone, headquarters and posts, reports, training, personnel.

Memorandum No. 7—Personnel Requirements for Air Raid General and Fire Precautions Service and the Police Service, 1938—5c—B.L.I. No. 103

Summary of main personnel requirements for Air Raid Wardens,
First Aid Parties,
Ambulance Services,
First Aid post staffs,
Rescue parties,
Decontamination squads,
Auxiliary services,
Fire brigade reserves and auxiliaries,
Police service and special police.

Handbook No. 8—The Duties of A.R. Wardens, 1938—5c—B.L.I. No. 92

What an A.R. Warden must know and do.

Air Raid Warning Signals, 1938—5c—B.L.I. No. 61

Gives details of signals and equipment used.

Training of Instructors (Local A.R.P.) and Training of A.R.P. Personnel and Members of the Public in Elementary Methods of Protection Against High Explosive Bombs and Incendiary Bomb Control, 1939 — 10c — B.L.I. No. 75

Training Local Instructors.
Syllabus of Training.
Lectures.
Training A.R.P. Personnel and General Public in Protection against H. E. Bombs.
Lectures.
Syllabus for Training A.R.P. Personnel (Including Fire Parties of Industrial and Commercial Establishments) and General Public in Incendiary Bomb Control.
Equipment for Incendiary Bomb Training.

Training Manual No. 1—Basic Training in A.R.P., 1941—15c—B.L.I. No. 113

Chapter 1—General Organization of Civil Defense.
Chapter 2—Incendiary Bomb Control—Diagram of bomb, Stirrup-pump and photos using stirrup-pump, Diagram of "Redhill" Container, scoop, and hoe, photos using them, and photos of how to rescue people.
Chapter 3—Notes on Elementary Protection Against High Explosive Bombs and photos of "Anderson" shelter, window shutters.
Chapter 4—War Gases and Personal Protection Against Gas-giving table of War Gases with properties, odor, effect on human body, melting or freezing point, persistence, general functions.
Diagram and photo of Civilian Respirator, photos of one in use—same for service Respirator, Photos of anti-gas suit.
Chapter 5—Notes on the Elements of First Aid with sketches and photos. Photos of artificial respiration.

***Training Manual No. 2—Manual for Officers Responsible for A.R.P. Training, 1940—15c—B.L.I. No. 114**

Training Organization and Routine Covers:
A. R. Wardens,
Ambulance Attendants,
Auxiliary Services,
Decontamination Squads,
Drivers of A. R. P. Vehicles,
First Aid Parties,
First Aid Post (Medical Staff).

Gas Identification Officers and Assistants,
Messenger Service,
Report Center and Control Center Staffs,
Repair Gangs,
Rescue Parties,
Giving time required for training in each division.

Nos. 113 and 114 Replace No. 105—A.R.P. Memorandum No. 9—Notes on Training and Exercises, 1939—5c

Memorandum No. 4—Organization of the Air Raid Warden's Service, 1939—5c—B.L.I. No. 100

Organization, Equipment, Qualifications, Syllabus of Training.

Handbook No. 10—The Training and Work of First Aid Parties—15c—B.L.I. No. 94

General Instruction for organization of first aid parties and of treatment and handling of various injuries.

Training of Air Raid Wardens, 1940—5c—B.L.I. No. 150

Wardens required to know vulnerable points and important turn-off cocks. In case of damage must be able to assess it and know how to act pending arrival of "trained personnel."

Community Feeding in War Time, 1941—30c—B.L.I. No. 130

Equipment needed.
Expenditures and wages.
Menus for body building, energy and disease-protection.
Feeding children.
Food substitutes.
Meatless and part-meat meals.
Suggestions for using home-grown foods.
Proportion (minimum) of ingredients.
Quantities of ingredients.
Fuel economy.
Emergency feeding after air raids.
Contamination of water and food.
Appendix I—Mobile Canteens and equipment.

Memorandum No. 15—Care and Custody of Equipment, 15c—B.L.I. No. 111

A. R. P. SCHEMES.

Air Raid Precautions Act, 10c—B.L.I. No. 227

The Act.

Stages in the Preparation of a Local Authority's Air Raid General Precaution Scheme, 1938—5c—B.L.I. No. 149

Information and Warnings of Air Raids.
Information and Reports of Casualties and Damage.
Air Raid Wardens.
Casualties Services.
Rescue Parties, Demolition and Clearance of Debris.
Decontamination Services.
Repair Service and Co-ordination with Public Utility Services.
Distribution of Civilian Respirators.
Storage and Maintenance of Equipment.
Appliances and Material required for the purposes of the scheme—probably superseded.

Maps for Use in Connection with A.R.P. Schemes, 1938—5c—B.L.I. No. 65

A. R. P. Signs to be used on maps for Warden's post, First Aid, Ambulance, Rescue Parties, A. R. P. Stores, Communication Depot, Police, Fire, etc.

AIR RAID SHELTERS

Air Raid Shelter Policy, 1939—5c—B.L.I. No. 228

Recommendations for home shelters.

Air Raid Shelters for Persons Working in Factories, Mines and Commercial Buildings, 1939—5c—No. 272

(This is the same as No. 121 of same title)
General Description of Shelter construction, ventilation, sanitary, lighting and other utilities.
Number of persons per shelter, layouts of shelters.

Your Home as an Air Raid Shelter, 1940—10c—B.L.I. No. 156

General description of different "garden" shelters.
General description of various inside rooms used as a "refuge" shelter, with diagrams.
Protection of windows and doors of "refuge" room shelter, and of window glass; fire precautions; taking cover. Sketches and photos of protective methods.

The Choice and Adaption of Shelter in Houses, 1940—5c—B.L.I. No. 128

Effects of Bombs on Houses.
Aims in Protection.
Protective Constructions in General.
Lateral Protection.
Overhead Protection.
Gas Protection.
Providing Internal Shelter.
Diagrams of various shelters.

Ventilation in the Black-Out, 1940—5c—B.L.I. No. 151

Curtains and wooden light traps and how to install them—with diagrams and photos.

Handbook No. 5—Structural Defense, 1939—60c—B.L.I. No. 89

Ballistics, general description of bombs and their effects.
Principles of shelter design, their size, general appurtenances.
Design of new buildings and references to fire resisting paint.
Old buildings, window protection and choice as shelters.
Advertisements for various shelter equipment.

Handbook No. 5A—Bomb Resisting Shelters, 1939—15c—B.L.I. No. 90

General design of shelters to resist:
1. Heavy high explosive bombs.
2. Heavy high explosive bombs with heavy case with diagrams.

GAS & ANTI-GAS PRECAUTIONS

A.R.P. Handbook No. 1—Personal Protection Against Gas, 1938—15c—B.L.I. No. 84

Chapter 1—The Nature and Properties of War Gases.
2—The Methods of Gas Attack from the Air.
3—The Detection of Gases.
4—General Anti-Gas Precautions and Collective Protection.
5—Protection of the Eyes and Lungs and diagrams and photos.
6—Protection of the Body and photos.
7—Anti-Gas treatment of Persons.
8—Decontamination of Clothing and Equipment.
Appendix A—The Fitting and Use of the Civilian Respirator and photos.
B—The Fitting and Use of the Civilian Respirator and photos.
C—The Fitting and Use of the Service Respirator.
D—Disinfection of Civilian Respirators.
E—Disinfection of Civilian Duty Respirators.
F—Disinfection of Service Respirators.
G—Disinfectants for Civilian Duty and Service Respirators
H—Cleansing Depot for A. R. P. Services and diagrams.

A.R.P. Handbook No. 2—First Aid and Nursing for Gas Casualties, 1940—10c—B.L.I. No. 85

Gives gases and their effects and how to treat each.

A.R.P. Handbook No. 3—Medical Treatment of Gas Casualties, 1937—15c—B.L.I. No. 86

Detailed treatment for various types of gases.

***A.R.P Handbook No. 4—Decontamination of Materials, 1939—15c—B.L.I. No. 87**

Chapter 1—How Contamination Arises
What contamination means
Types of Contamination
Effect of weather
Chapter 2—General principles of Decontamination
What Decontamination involves
How to deal with non-persistent gases
Methods of decontamination of persistent tear geases
Contamination by blister gases
Principles of decontamination for blister gases
Methods and materials used in decontamination for blister gases
Chapter 3—Duties of Decontamination Services
Organization and training of decontamination personnel
Precautions when entering a gas-contaminated area
Marking of Areas contaminated by blister gas
Chapter 4—Decontamination of Roads, Open Spaces, etc.
Treatment of Light and Medium Contamination
Heavy contamination of Road Surfaces
Craters produced by gas bombs
Damaged pipes and cables—*public utility repair men need special training here*
Chapter 4—Debris from damaged buildings, etc.
Open spaces, gardens, etc., in built-up areas
Natural earth surfaces and grassland

THAT DEMONSTRATION PAYS...

Chapter 5—Decontamination of buildings and their contents
General considerations
Exterior walls
Concrete floors and tiles
Interior walls (papered and distempered)
Painted surfaces (Plaster or woodwork)
Wooden floors and unpainted woodwork
Furniture and household goods
Chapter 6—Decontamination of Vehicles
General instructions
Buses and Streetcars
Commercial Vehicles and carts
Private cars
Railway rolling stock
Chapter 7—Particular decontamination problems in factoreis, etc.
Special items in factory plant, etc.
Decontamination of Garages, Bus Depots, etc.
Appendix A—Equipment for a decontamination squad
B—Methods of decontamination for road surfaces
C—Methods of decontamination for the structure of buildings
D—Methods of decontamination for household articles
E—Methods of decontamination for vehicles

***A.R.P. Handbook No. 4A—Decontamination of Clothing Including Oilskin Anti-Gas Clothing and Equipment, From Blister Gases, 1939 — 10c — B.L.I. No. 88**

Part 1—General—Method of decontamination for different materials
Part 2—Decontamination methods to prevent spoilage of materials in garments
Part 3—Decontamination of Oilskin Anti-gas Clothing—method and equipment used
Appendix A—Protective clothing for personnel engaged in decontamination work
B—Drawing of metal basket used in treatment of oilskin anti-gas clothing

A.R.P. Memorandum No. 3—Organization of Decontamination Services, 1938—5c—B.L.I. No. 99

General Nature of Requirements for Decontamination of Materials
Scope of Decontamination Service
Scale of Organization
Relation to other A.R.P. Services
Scheme for an Urban Area
Outline of Organization
Personnel of Decontamination Squads
Equipment of Decontamination Squads
Depots for Decontamination Squads
Value of Street Washing Vehicles and Tank Vehicles generally
Vehicle Decontamination Depots
Summary of Advance Preparations in Urban Areas
Scheme outside Urban Areas
Co-ordinated Schemes in County Areas
Special requirements in Rural Areas
Organization in Scotland
Equipment for Decontamination Squads (may be superseded by better information)

A.R.P. Memorandum No. 5—Anti-Gas Training, 1938—10c—B.L.I. No. 101

Civilian Anti-Gas Schools
Local training of Local Anti-Gas Instructors
Scheme of Medical Anti-Gas Instruction
Qualifications to act as local Anti-Gas Instructors
Provision for Training Equipment
Syllabuses for Local Anti-Gas Training
Public Anti-Gas Instruction
Gas Vans and Gas Chambers
Insurance by Local Authorities for Volunteers undergoing Anti-Gas Training
Scheme of Local Anti-Gas Courses for training local Anti-Gas Instructors
Equipment for Local Anti-Gas Training
Instructions in the use of Smelling Samples of Poison Gases in Bottles, as carried on Gas Vans
Instructions in the use of Mixture "2" to simulate Mustard Gas
Syllabuses for Courses of Local Anti-Gas Training
Home Office Gas Vans—Distribution
Scheme for Insurance by Local Authorities for Volunteers undergoing Anti-Gas Training

A.R.P Memorandum No 11—Gas Detection and Identification Service—10c—B.L.I. No. 107

Organization, including questions of Recruiting and Training Duties of respective Services. Detector Paint.

Revised Syllabuses of Anti-Gas Training, 1939—5c—B.L.I. No. 71

Gives general training syllabus and references to A.R.P. Handbooks in which training information is contained.

A.R.P. Anti-Gas Protection of Babies and Young Children, 1939 — 5c — B.L.I. No. 124

The Small Child's Respirator
The Protective Helmet
How to decide which protective appliance should be used for a young child
Baby's Anti-Gas Protective Helmet—Instructions for use
Small Children's Respirator—Instructions for putting on
Protective Helmet usually up to 2 years
Small Child's Respirator, 2½-4 or 5 years
Civilian Respirator (small size), 4½-5 years up

***The Detection and Identification of War Gases—Notes for the Use of Gas Identification Officers, 1941—30c—B.L.I. No. 152**

Chapter 1—The War Gases—Introduction
2—The War Gases—Physical and Chemical Properties
3—Principles and Methods of Gas Detection
4—Duties and Responsibilities of Gas Identification Officers
5—Chemical Identification of War Gases
Chart of Physical properties of War Gases
Chart of Odor and irritant effect of War Gases
Chart of Chemical properties of War Gases
Appendix 1—Sampling and Testing Equipment
2—Report Form

A.R.P. The Protection of Foodstuffs Against Poison Gas, 1939 — 10c — B.L.I. No. 10

Types of gases and packings required for protection.
Protection by gas-proofing room in which foods are kept.

Memorandum No. 13—Inspection and Repair of Respirators and Oilskin Clothing—5c—B.L.I. No. 109

EMERGENCY FIRE BRIGADE ORGANIZATION

Emergency Fire Brigade Organization, 1939—5c—B.L.I. No. 163

Recruiting—Ultimate Requirements of Personnel
Training
Organization of the Patrol System
Uniforms
Mobilization Arrangements
Transport
Sleeping and Messing Accommodation
Protection of Personnel
Communications

Emergency Fire Brigade Organization, 1939—5c—B.L.I. No. 162

Somewhat similar as No. 163 and used in conjunction with it.

Memorandum on Local Fire Services in Rural Districts, 1939 — 10c — B.L.I. No. 177

Make up of Parties, Equipment Required and other required arrangements.

Memorandum on Emergency Fire Brigade Organization, 1937 — 15c — B.L.I. No. 175

All right but probably out-dated. Gives organization and lists of equipment required.

Emergency Fire Brigade Appliances, 1938—25c—B.L.I. No. 173

General Equipment required and photos of pumps, trailer pumps, etc., and of them in action—interesting but not very important booklet.

Sketch of Emergency Fire Brigade Organization for a Hypothetical Town, 1937—5c—B.L.I. No. 179

Gives appliances and personnel required for city of 80,000—otherwise not much value.

Protection of Fire Brigade Premises Against Air Attack, 1939 — 10c — B.L.I. No. 165

Where necessary strengthen roof, floors, partition walls, windows
Financial assistance

Protection of Fire Brigade Premises Against Air Attack, 1939 — 10c — B.L.I. No. 217

This is for Scotland and is similar generally to No. 165.

MISCELLANEOUS

Statutory Rules and Orders 1941 No. 451—War Damage—Private Chattels Scheme, 5c—B.L.I. No. 316

States that Insurance rate on first £2,000 is 1%; next £1,000, 1½%; next £7,000, 2%.

A.R.P. To Be Taken by Users of Ammonia, 1940—5c—B.L.I. No. 120

Precautions to be taken with stocks of ammonia.

World's first submarine

It was King James I of England who sponsored the first undersea craft men had ever seen. The amazing vessel was "launched" in 1624 . . . and a surprised Court watched as the King, after inspecting the boat, stepped into it and enjoyed a subsurface voyage down the Thames River.

912, Harper-Wyman Co.

Nothing convinces like demonstration

TODAY the gas industry must prove to the public that Gas brings unmatched advantages into the home. And there is no better way to do this than by demonstrating the best gas appliances.

Connect a Harper-equipped range to gas and let your customers actually *see* why the modern gas range has the advantage. Let them check the time-saving speed of the Harper STARTING BURNER. Show them the fuel savings and other unique advantages of the tiny, independent COOKING BURNER . . . controlled by the same handle.

Once your customers have seen Harper's "2 burners in 1" *in action,* much of your selling has been done! You have convinced them that no other fuel does the job of cooking so efficiently and economically as Gas!

DEMONSTRATES THAT "GAS DOES IT BEST"

HARPER
BURNER SYSTEM

TURN THIS PAGE FOR PROOF THAT DEMONSTRATION PAYS...

SHOW your customers

this *"worry-free"* automatic ignition!

EVERY HOUSEWIFE wants to be sure that no harm can come to her foods while they are cooking—even when she is absent from the kitchen. So show her the reliability and convenience of Harper's immediate automatic ignition.

Turn on the Harper COOKING BURNER . . . and then blow it out. Let your customer see how it promptly re-flames.

Then say something like this: "If you are simmering a stew or preparing some other food which requires long cooking, the Harper COOKING BURNER relieves you of all concern. If a sudden draft or gust should blow out the burner, it would, as you've seen, immediately re-light. Your food would continue to cook safely."

New FREE BOOKLET: "How to Sell More Gas Ranges," contains twelve easy and practical floor demonstrations which prove the superiority of the modern gas range. The booklet shows how to demonstrate ABSENT COOKING, KEEP WARM HEAT, VITAMIN SAVING, TIME SAVING, FUEL SAVING, COOLER KITCHENS and other advantages. Send for your free copies. *Harper-Wyman Company, 8562 Vincennes Avenue, Chicago.*

The Harper Burner System operates on the unique principle of a burner within a burner . . . "2 burners in 1" . . . both controlled by the same handle. It is subject to finer gradations of low heats—greater control and economy —than any other cooking unit made.

UNITED GAS CORPORATION

OPERATING DIVISION

P. O. BOX 2628

HOUSTON, TEXAS

May 7, 1941

Mr Philip S Harper
Harper-Wyman Company
8562 Vincennes Avenue
Chicago, Illinois

My dear Mr Harper:

Yes, we do make floor demonstrations as a regular part of sales routine because we have found that customers are seldom convinced until they "see for themselves". We agree with the man who said that a floor sales presentation without a demonstration is just a lot of conversation.

Floor demonstrations of modern gas ranges are invaluable and provide a practical way of further selling customers the benefits and advantages of gas cookery. In the final analysis, the customer buys a cooking service and the purchase of the gas range is only a means to this end.

We compliment you on your current advertisements, urging the gas industry to make wider use of demonstration as an aid to increase sales of gas service and modern gas ranges. These advertisements are most timely.

Sincerely yours,

T. E. Hawkins

T E Hawkins
Sales Promotion and
Advertising manager

Proof That Demonstration Pays

HARPER BURNER SYSTEM

—one of the standards of top-burner performance under

A.R.P. Lighting During Black-Out Hours in Shipbuilding and Ship-Repairing Yards, 10c—B.L.I. No. 138

Shipyard lights to be extinguished 4 minutes from receipt of raid-warning. Open roadways .002 ft. candles on ground. Dock sides and gangways, .02 ft. candles. Work on ship bottoms 40 watt lamps.

A.R.P. Training Bulletin No. 1—15c—B.L.I. No. 112.1

Explains animal first-aid posts and mobile units. All animals are registered and each has a registered identity disc.

A.R.P. Training Bulletin No. 4—10c—B.L.I. No. 112.4

Plate glass 3/16" or more is likely to break if a bomb is dropped within 200 feet.

Organization of Road Transport for a Defense Emergency—Part 2—Public Service Vehicles, 1939 — 5c — BL.I. No. 225

Short note to the effect that Vehicles may be required by the Government in Wartime.

References Other Than Those Available At the British Library of Information, New York

GENERAL

Protective Measures for Gas Undertakings Against a National Emergency—At Cardiff—English Gas Journal, Oct. 4, 1939, p. 24

Even though written soon after war started this is very good reading.

Damaged Mains and Their Repair—English Gas Journal, Sept. 20, 1939, p. 662

Placing length of 12" main over broken 9" main.

Second Report of the Pipes Committee—English Institution of Gas Engineers Communication No. 192—English Gas Journal, Nov. 9, 1938, p. 450-455

List of British Standard Specifications for A.R.P. — English Gas Journal, Sept. 13, 1939, p. 602

Further British Standard Specifications for A.R.P. — English Gas Journal, No. 8, 1939, p. 282

A.R.P. Gasworks Post Photo—English Gas Journal, Jan. 29, 1941, p. 191

"Londex" Air Raid Alarm System—English Gas Journal, Jan. 29, 1941, p. 191

Air Raid Shelters—English Gas World, Aug. 16, 1941—Industrial Gas Supplement, p. 8 and photos

Gas World Year Book 1941—

Reserve Occupations, p. 43
Employment of Aliens, p. 43
Fire Watchers, p. 43
War Time Legislation, p. 44
Street Lighting, p. 46

War Legislation and the Gas Industry—English Gas Journal, Feb. 12, 1941, p. 283-289

Compulsory War Damage Insurance—English Gas Journal, April 2, 1941, p. 13

Coverage and Rates; and Editorial

STREET LIGHTING A.R.P. INFORMATION

English Gas Journal—October 4, 1939, p. 37

Requisites for Gas Lighting—Light Screening (Falk Stadelmann) and photograph.

English Gas Journal — November 8, 1939, p. 285

Gas Lamps Adapted to Indicate Coventry's A.R.P. Services with photos.

English Gas Journal — December 6, 1939, p. 500

Gas Directional Lamps as guides to Air Raid Shelters at Stoke-on-Trent with photographs.

English Gas Journal — December 20, 1939, p. 605

Editorial—The Street Lighting "Let Up" —data on foot candles, etc.
Approved A.R.P. Street Lighting (Sugg) with photo, p. 608.
Draft of British Standard Specification A.R.P. Series for Street Lighting under War Time Conditions, p. 625.

English Gas Journal — February 14, 1940

Modified Street Lighting Units (Parkinson), British Standard Specification A.R.P./37 with drawing, p. 344.
This "Starlight"—Article on War Time Street Lighting, p. 349.
War Time Street Lighting by Gas—Institution Communication No. 225—(Largely a reproduction of the Institution Communication No. 225), p. 354-361.

Gas World Year Book—1941, p. 46-48

Institution Communication No. 225.

English Gas Journal—June 12, 1940, p. 546

Gas A.R.P. Signs—Editorial giving information of foot candles used.
Note:—This last reference is included in the American Gas Association Monthly Bibliography—July-August, 1941.
In 1938 over 14 billion cubic feet of gas was used in public lamps in England.

INCENDIARIES

English Gas World—August 23, 1941, p. 90

3 photo-electric devices to detect incendiaries.

English Gas World—March 1, 1941, p. 102

Incendiary bomb detection.

English Gas World—May 3, 1941, p. 225

Putting out incendiaries.

A.G.A. Monthly—July-August 1941

3½ page bibliography of National Defense and A.R.P. for Public Utilities.

Architectural Forum—November 1940

16 page National Defense Bibliography.

National Technological Civil Defense Committee Release No. 1 — April, 1941—16 pages

Copies post free for 10c prepaid to C. A. Reves, Polygraphic Co., 310 E. 45th St., New York City.

Civil Defense—Democracy in Action by Colonel Joseph A. Baer

U. S. A. Chief of Staff, 2nd Corps Area, Officer in Charge of Civil Defense.

Common Sense and A.R.P.—Major General C. H. Foulkes—C. Arthur Pearson Ltd., London, 1939, One Shilling (about 25c)

County of Westchester, New York

Has an A.R.P. scheme set up on British lines.

The following data is not included in the paper, but is added to complete information available at the British Library of Information in New York City up to and including their list of Booklets and pamphlets dated April 30, 1941. This list was current on October 17, 1941.

I marked the following pamphlets on the B.L.I. list as of likely interest to Gas Men, and found as follows:

Anti-Gas Instructional Diagrams, 1939—$1.75—B.L.I. No. 123

Large Roll of Diagrams in large carton—for instruction purposes.

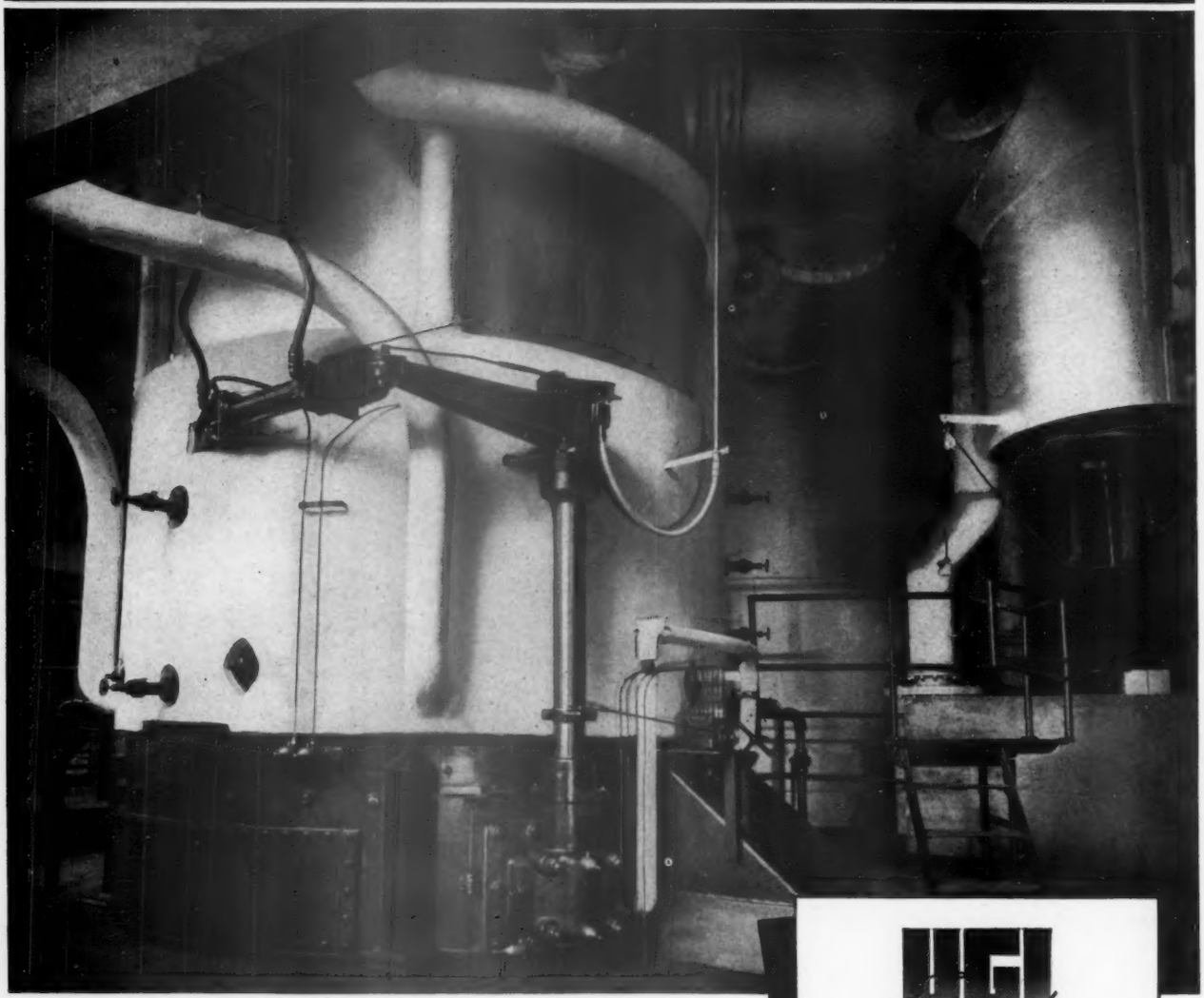
Short Circular Letters to Local Authorities—of Little Interest

Cooperation with Police and Defense Forces, 1937—5c. B.L.I. No. 54.
Cooperation between Local Authorities and the occupiers of Industrial or Business Premises, 1937—5c. B.L.I. No. 55.
First Aid Posts, 1937—5c. B.L.I. No. 56.
Lighting Restrictions, 1938—5c. B.L.I. No. 59.
Emergency Fire Brigade Organization, 1937—5c. B.L.I. No. 159.
Cooperation with Police and Defense Forces, 1937—5c. B.L.I. No. 205.
Cooperation between Local Authorities and the occupiers of Industrial or Business Premises, 1937—5c. B.L.I. No. 206.
Emergency Fire Brigade Organization, 1938—5c. B.L.I. No. 212.

NOT AVAILABLE

Repair of War Damage: Essential Buildings and Plant, 1939—5c. B.L.I. No. 199, Circular only.
Chemical Warfare, Medical Manual of—75c. B.L.I. No. 226.
Personal Injuries (Emergency Provisions) Act, 1939—5c. B.L.I. No. 240.
Erection of Air Raid Shelters, 1940—5c. B.L.I. No. 293, Circular only.
Civil Defense (Compulsory Enrollment Order), 1941—5c. B. L. I. No. 311, Circular only.
Civil Defense Employment No. 2 Order, 1941—5c. B.L.I. No. 314.
War Damage—Business Scheme, 1941—5c. B.L.I. No. 315.
War Damage—Private Chattels Scheme, 1941—5c. B.L.I. No. 316.
Civil Defense (Employment and Offenses), 1941—5c. B. L. I. No. 318.
Civil Defense (Employment and Offenses), 1941—5c. B.L.I. No. 319.

U.G.I. MODEL "D" MECHANICAL GENERATOR



Model "D" is the latest development of the U.G.I. Mechanical Generator. The operating features and advantages of the Model "B"—of which 65 are installed or under construction—have been retained.

The design of the bottom construction has been simplified. A ratchet drive, actuated by high pressure oil through a hydraulic cylinder, provides the motive power for the rotation of the grate.

The tuyere for admission of air and steam, the water jacket, rotating sectional ash pan and method of ash extraction which largely account for the success of Model "B" are incorporated in Model "D" without change.

A Model "D" Generator has been in operation at the Long Island Lighting Company's Bay Shore (N. Y.) Works for eight months, and three more are now under construction for utility plants.

U.G.I. Equipment

UNITED SERVICES PROVIDE

EXPERIENCE IN DESIGN
United has over 50 years experience in gas plant design.

EFFICIENT APPARATUS
United has pioneered major developments in water and coal gas production.

ECONOMICAL CONSTRUCTION
United has large well organized forces for gas plant and general construction work.

EXPERIENCE IN OPERATION
United has experienced plant operators for securing most efficient results.

UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

The Flexibility of a Small Water Gas Set*

By
Joseph M. Duffy,
Gas Superintendent
Nantucket (Mass.) Gas and Electric Company

NANTUCKET ISLAND is about 3½ miles wide and 14 miles long, and as the advertising folders say, is 30 miles at sea. Public transportation and freight are handled by steamers with one round trip a day in the winter and 3 round trips a day in the summer. The largest steamer will carry about 80 automobiles and 500 passengers.

Nantucket Island is a summer resort; and as a result, our summer gas load is three times the winter load. There has been an increase in our sendout from 28 MM in 1930 to 47 MM in 1940.

We are independently owned and operated, and must paddle our own canoe as regards technical advice. On the other hand our small size makes it possible for us to try suggestions made by our operators and friends, to whom we are indebted.

The water gas set consists of a Steere five foot machine with the necessary equipment for operating with heavy oil, and is equipped with back run, and three way valve. Installed in the top of the carburetor is a Semet-Solvay ignition dome. The Oil spray is situated near the base of the carburetor and discharges oil upwards counter-current to the blue-gas flow. The set is hand operated from the charging floor.

The gas conditioning equipment is more than adequate, and consists of a Doherty washer-cooler, a multiple washer and two purifiers of 1000 bushel capacity each. The purifiers have outside reversing valves, but the order of the boxes may not be changed. The relief holder capacity is 60,000 cubic feet, and the storage holder capacity is 200,000 cubic feet. Both holders are of the water seal tank type.

We have a recording thermeter, a Shilling specific gravity apparatus and an Orsat.

During the past nine months we have produced gas with results that we think we can duplicate with the following fuel combinations: (1) coal and Sun #11 oil (a heavy gas oil of 18° A.P.I.), (2) coal and #2 furnace oil, (3) coke and Sun #11 oil.

We began the use of soft coal on May 17, 1941, going from 100% coke operation to 100% coal operation. Our operation with coal has been confined to Island Creek, Mine #22, 3" x 5" lump. The fusing temperature is 2600° F., and the coal contains 38% volatiles.

During our first month of operation, our make per hour dropped from 23,000 cu. ft. with coke to 17,000 cu. ft. with coal. In a small company where generator house labor runs 10 cents per thousand cubic feet of gas, the make per hour is more important than it would be in a larger company, where generator house labor runs from 2c to 3c per thousand. We had difficulty lighting the carburetor along with a serious smoke problem. You can readily see that something had to be done.

We had been running on the same cycle used for coke operation with reduced air and steam rates. Our cycle at this time was as follows:

Blow-run	9 sec.
Up-run	1 min. 30 sec. @ 19# steam per min.
Back-run	1 min. 9 sec. @ 20# steam per min.
Final up-run....	12 seconds
Total	3 minutes

Our figures running on this cycle for May, 1941 were as follows:

Make per hour.....	17,000 cu. ft.
Make per sq. ft. per hour	2,160 cu. ft.
Make per run.....	1,400 cu. ft.
Oil per M.....	3.51 gals.
Coal per M.....	27.0 lbs.

The smoke difficulty was overcome by opening the carburetor valve immediately after opening the stack cover. In this way the carburetor was lighted and the volatiles coming from the generator were burned.

The first step toward increasing capacity was to lower the fire level, which we had carried up to the charging lid. It was lowered to a few inches below the generator offtake. We were rewarded with a better fire condition, and make per hour increased somewhat. The next step was to make all the blow-run on the run after charging. The purpose of the blow-run is to heat the generator fire without heating the carburetor and superheater. In this way we condition the fire for the decomposition of steam in the runs that follow. Another purpose of the blow-run after charging is to save the rich volatiles that are driven off the coal during the process of carbonization. While this blow-run was being developed, constant checks of the CO_2 content and specific gravity of the gas were made. The blow-run resulted in a high gravity and low B.T.U., together with an increase in capacity from 17 M per hour to 21 M per hour.

In an attempt to increase the B.T.U.'s, steam was added to the blow-run. This resulted in a slight saving of oil, and the specific gravity dropped a litle. Capacity increased to 22 M per hour.

We still had difficulty maintaining B.T.U., so we added oil to the blow-run. This resulted in a better oil figure and a further drop in gravity. Capacity increased from 22 M per hour to 24 M per hour.

In an attempt to gain control over the gravity, a back-run with oil in the carburetor was added. We now hold the gravity around .67 to .68. As our operators became familiar with the handling of this run, they became able to produce and maintain figures for five weeks ending January 11, 1942 as listed below:

Operating time about 7½ hours every other day.

Make per hour.....	28,500 cu. ft.
Make per sq. ft. per hour	3,620 cu. ft.
Make per run.....	3,240 cu. ft.
Coal per M.....	21.0 lbs.
Oil per M.....	3.9 gals.
CO_2	5.4%
Sp. Gr.....	.67
Gas heating value...	532 B.T.U. average

**Presented at the Operating Division meeting of the New England Gas Association, Boston, Mass., January 14, 1942.*

Our method of operation now is as follows:

(1) The machine is brought up to temperature before charging.
(2) Coal is charged in.
(3) Go on blow-run, the up-run portion of this run consists of air 1400 cu. ft. per min.—steam 15# per min. with oil injected through the generator oil spray. This may run 2, 3, or 4 minutes depending on the B.T.U.
(4) Go on A 1 minute back-run, adding oil through the carburetor spray.
(5) Go on final up-run. Open stack and blast to temperature.
(6) The remainder of the runs on the charge are normal steam runs with no blow-run.

Our steam cycle is set up as follows:

Blow-run	0
Up-run	1 min. 25 sec. @ 21# steam per min.
Back-run	1 min. 25 sec. @ 23# steam per min.
Final up	10 seconds

Charging: Our method of charging is to make light charges and less runs on a charge. (The charges range from 200 lbs. to 350 lbs.) rather than by runs. The operator tells his helper the amount of coal he needs on the next charge.

Clinker: The clinker is friable and easily broken up and removed. It is found about 2 or 3 inches off the grates. The fire is cleaned every other day.

Tar: The emulsion produced is easily processed. The emulsion is pumped from the separator to a tank we call a cooker. There it is brought to a boiling point and allowed to settle off. This dehydrates the tar to about 10% to 15% water. The tar is then pumped to the electric station to be burned under the boilers.

Looking ahead as far as possible, we have made tests for gum formations with pilots and needle valves, resulting in no indication of gums. Our distribution system shows less gum than formerly. We also made tests for naphthalene by bubbling the gas through picric acid. There were minute indications, but not enough to worry us.

It became necessary for us to dispose of 16,000 gallons of #2 furnace oil, so we used above described cycle, and obtained the following results.

Coal and #2 furnace oil

Make per hour	25,451 cu. ft.
Make per sq. ft. per hour	3,230 cu. ft.
Make per run	2,086 cu. ft.
Coal per M	25.1 lbs.
Oil per M	2.89 gals.
Average B.T.U.	533
CO_2	5.4%
Sp. Gr.	.67

The same cycle was also tried with coke and Sun oil #11. The following results were obtained:

Make per hour	30,400 cu. ft.
Make per sq. ft. per hour	3,860 cu. ft.
Make per run	3,426 cu. ft.
Coke per M	23.0 lbs.
Oil per M	3.50 gals.
Average B.T.U.	530
CO_2	3.5%-4.5%
Sp. Gr.	.68

Neither of the last two fuel combinations resulted in changed general operating conditions, such as clinker, carbon in carburetor, tar quality, etc.

Our F.O.T. figures for the above fuel combinations are:

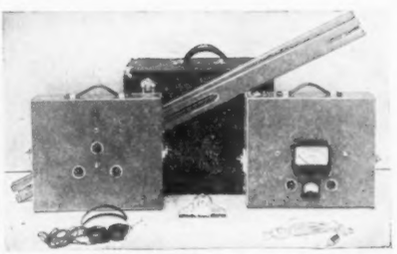
Fuel Price	*F.O.T.*
Coal—$8.00	
Coal and #11 oil.....	18.4¢
#11 oil—3.6c	
Coal and #2 furnace oil..	22.2¢
#2 Furnace 5.0¢	
Coke and #11 oil.....	22.2¢
Coke—$10.80	
Tar — 3.2¢	

We feel that this method of operation will reduce maintenance. The cycle is the easiest of any tried on our machine. The carbon accumulation in the carburetor has been reduced to where we only open the carburetor once a week for scurfing. The three-way valve is cleaned in half the former time. The brick work shows no indication of scouring.

During the period before the writer became associated with the company the water gas set has been operated with various combinations of standard Bunker "C", residuum and gas oil and three different cokes. It is apparent that almost any combination of generally accepted fuels can be used successfully without a very large change in the over-all heat efficiency of the plant. Believing that we are as close to the ground on low cost B.T.U.'s as possible, we hope that economic conditions will allow us to continue with our present fuels, coal and Sun #11 oil. We are also pleased that a radical change in prices of any single fuel will leave us relatively unaffected, as we now know that we can use a wide variety of raw materials.

THE OLDWAY

The NEW M-SCOPE WAY



To Locate PIPE and CABLE

IT is no longer necessary to GUESS at the location of mains or cables, or wonder how deep they are buried.

There need be no further MYSTERY about dead ends, valves, manholes, and drip boxes.

YOUR NAME ON THE COUPON BRINGS THIS BOOK FREE

JOSEPH G. POLLARD CO., INC.
PIPE LINE EQUIPMENT
152 Ashland Pl. BROOKLYN, N. Y.

Please send book describing the M-SCOPE

Name .....
Company .....
Address .....

GREATER ACTIVITY

LESS OXIDE REMOVES MORE H_2S

GREATER CAPACITY

"POSIES" FOR PERFORMANCE

are cast our way by present users of LAVINO "ACTIVATED" OXIDES

They applaud the fact that, for all loads from traces to the heaviest, LAVINO "ACTIVATED" OXIDES display a maximum capacity and activity . . . set a ceiling on purifying cost far under that with ordinary oxides.

Savings in material, savings in handling reflect credit on those responsible for this phase of operations. *How* and *why* these savings can be made is the interesting story we'd like to tell you. Write us for details; no obligation, of course.

E. J. LAVINO and COMPANY · 1528 WALNUT ST., PHILA., PA.

NOW IS THE TIME

Today every plant essential to the nation's welfare must operate at peak capacity . . . and Champion Gas Coal is helping Gas, Coke and By-Product plants secure richer, better yields . . . consistently, day after day.

Champion GAS Coal
"IT'S THE BEST"

PITTSBURGH COAL COMPANY
GENERAL OFFICES: OLIVER BUILDING · PITTSBURGH, PA.
Cleveland, O.; Sault Ste. Marie, Mich.; Buffalo, N. Y.; Utica, N. Y.; New York City; Philadelphia, Pa.; Youngstown, O.
PITTSBURGH COAL CO., LTD., London, Ont., Hamilton, Ont., Toronto, Ont., Windsor, Ont.
PITTSBURGH COAL CO. of Wisconsin, Duluth, Superior, Minneapolis, St. Paul
MILWAUKEE-WESTERN FUEL COMPANY, Milwaukee, Wisconsin

With Natural Gas in the Offing, Wisconsin Gas & Electric Co. Expands Plant

By
John E. Hubel
Nashotah, Wis.

RECENTLY, when the Wisconsin Public Service Commission announced that it had decided to permit the Wisconsin Natural Gas Transmission Co., a Phillips Petroleum Company subsidiary, to run its pipe lines into Wisconsin, it looked as if this state were to be supplied with natural gas at an early date. Two other companies had fought for the privilege of entering Wisconsin, and had filed briefs to show how well they were equipped to do the job. In fact, the two losing companies would have apparently been able to enter Wisconsin without too much pipe laying, as at least one of the two companies has its pipe lines almost up to the Wisconsin border, on the Illinois side. The Commission, however, chose the Phillips subsidiary, which would have to lay about 875 miles of pipe to get to Wisconsin from the southwest.

That was one phase of the situation. After we entered the war, and steel had to be conserved more than ever, it was clear that there would be an indefinite delay in starting the work of pipe laying.

The gas companies were rather noncommittal in the matter, and it appeared that they would just as soon go on with artificial gas manufacture and distribution if the state did not permit the pipe lines to enter Wisconsin. With the emergency, more gas for industrial purpose would be necessary, but it might be a year before natural gas could enter the state from the southwest. On January 15th it was announced by the Milwaukee Gas Light Company that it would not be able to supply all of the gas required for the large number of factories in the Milwaukee area, working on defense projects.

Another large industrial center is Racine, about 25 miles from Milwaukee, on Lake Michigan. In this city the gas is furnished not only for local use, but also for a dozen or more cities in south-eastern Wisconsin, for domestic and industrial use. Most gas companies in Wisconsin, although admitting that they could make good use of larger plants for gas manufacture, intimated that this was not a time to expand, in view of the possibility of natural gas being piped in at some time in the not too distant future. There is one exception, however. On January 17th the Wisconsin Gas & Electric Company announced that it had decided to expand its plant, and not wait for the possible coming of natural gas. On that date it was granted permission by the Wisconsin Public Service Commission to construct a water gas plant in Racine, at a cost of $105,000, with a capacity of 3,000,000 cu. ft. of gas daily. In granting the permission to add to this plant, the public service commission said:

"It appears that the company cannot rely on its existing facilities for the gas production necessary to meet the demands of the public served, and that if it is to continue performance of its duty to the public, additional generating facilities must be provided.

"The company is confronted with the possibility that natural gas instead of manufactured gas may be available as its source of supply, but the time when natural gas will be available, as well as whether it will be available at all, are both more or less in the realm of conjecture. However," the report continues, "we agree with the applicant that it is wise, as well as for the best interests of the public, that the additional facilities now required should be of such character that they will have the most use and value should natural gas become available."

And so a new gas generating unit will go up in Racine, whether natural gas really does come to Wisconsin or not.

REED'S 4 WHEEL
Razor Blade Pipe Cutters

IDEAL FOR ANY TRENCH OR OTHER CLOSE QUARTER JOBS

$5.46 F. O. B. ERIE

Capacity
½" to 2"
Weight 5 lbs.

The REED FOUR WHEEL Cutter operates with a short back and forth motion through only one-third of a circle. Each of the four wheels exerts the same pressure on the pipe, and all 4 therefore cut evenly and completely through the pipe at the same time.

Equipped with Reed special alloy RAZOR BLADE Wheels, which cut with remarkable ease, leave little burr, and have a long life of useful service.

A sample cutter for test and trial may be ordered on memorandum invoice, to be paid for if retained or returned for credit if unsatisfactory. Try it once, and you will use no other.

REED MFG. COMPANY
1436 W. 8th Street • ERIE, PA.

RECENT COURT DECISIONS *Affecting Gas Utilities*

Defective Service Line—Explosion Liability of Gas Company

By
Leslie Childs

GENERALLY SPEAKING, a gas company will not be liable for an injury from an explosion caused by defects in a service line, in the absence of knowledge or notice of the defects prior to the accident. This seems to be the general rule, and thereunder the mere fact of an explosion will not, in itself, constitute a basis for liability against the company.

On the other hand, where a gas company has knowledge or notice of a defective service line, it will act at its peril in continuing service therein until repairs have been made. Whether the company requires the customer to make the repairs, or makes them itself, may of course depend upon the terms of the contract between the parties.

However, be that as it may, if and when a company undertakes to repair a defective service line, it may be held liable for a failure properly to perform—in other words negligence. And this is true even though it renders the services free of charge, and is under no legal duty to undertake them. The application of this rule of liability is illustrated in a striking manner in the following case.

Customer Suspected Leak In Service Line

Here the plaintiff, a home owner, suspected a leak in his gas service line somewhere between the curb and the cellar of his house. Plaintiff told a foreman of the defendant gas company of this and the foreman, who was working on a neighboring property with his crew, came over and investigated. Sure enough, the foreman discovered a leakage and told plaintiff that if he would uncover the service line, that he, the foreman, would replace the defective pipe.

Acting on this, the plaintiff uncovered about 14 feet of the service line which disclosed a corroded and leaky section of pipe. The defendant's foreman with his men inspected same, removed 12 feet of pipe, replaced it with new pipe, and informed plaintiff that "it's all right now." No charge was made for this service, and, it seems, the defendant was not legally bound to render same, as the duty of maintaining the service line in repair rested upon the plaintiff.

Some time thereafter, while plaintiff was in his basement applying a torch to frozen water pipes an explosion occurred in which plaintiff suffered serious injuries. It then developed that the explosion resulted from a leak in the service line that had not been replaced when the repairs were made by the defendant's employees; that the service line passed through filled ground which permitted the leaking gas to accumulate in the hollow tile wall in plaintiff's cellar.

Anyway, plaintiff sued the defendant for damages, alleging his injuries were caused by the negligence of the defendant's employees in repairing the service line. In defense to this the defendant, among other things, it seems, contended that it should not be held liable since it was clear that its employees had installed the replacement of the section of pipe found defective in a proper manner; that it was under no obligation to go further than this, in the matter of inspection, in anticipation that there were other defective sections in the service line involved.

On the evidence as it has been outlined, the trial court held the question of negligence presented a question of fact for the jury. The case was then submitted to the latter, and a verdict of $5,000 was returned in

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For Sound Values and Continuous Operating Economy

Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs

Write for details and quotations

SUPERIOR METER COMPANY, INC.
167 41st Street ***Brooklyn, N. Y.***

favor of the plaintiff. From judgment on this the defendant appealed, and the higher court in reviewing the record and in affirming the judgment, among other things, said:

The Language of the Court

"Upon the question whether there is sufficient evidence of negligence, it seems to us that when defendant's employees undertook to ascertain the cause of leaking gas upon plaintiff's premises, and discovered a corroded and perforated service line and proceeded to repair it, they were under a duty to make an adequate inspection to determine whether the remaining sections of the line were in the same defective condition as those which they had removed and replaced with new pipe.

"It is not sufficient to assert that defendant was bound merely to install a twelve foot piece of pipe in the service line, and the burden reposed upon it was satisfied when this work was performed in a proper manner. Defendant was obligated to go further, in view of the knowledge acquired by the condition of the pipe and the character of the ground in which it was laid, and to ascertain whether the corrosion extended to the remaining portions of the line, before turning gas into it and advising plaintiff 'it was all right.' * * *

"Plaintiff relied entirely upon the experience of the defendant's employees in such matters. * * * If defendant's employees had exercised the required diligence when they assumed to replace the leaking pipe, they would have remedied the condition themselves, or have warned plaintiff that he must do so, and discontinued service until the work was done, for primarily the burden rested upon plaintiff to maintain his service line in good repair. * * * Judgment affirmed." (2 Atl. 2d 343)

Summary

So ended the case with the defendant, gas company, being held liable in a substantial amount for injuries suffered by plaintiff growing out of the explosion. Of course, the case was decided upon its facts and circumstances as most cases of this kind must necessarily be decided, so that it does not purport to announce any hard and fast rules.

However, this in no way detracts from its force and value as an example of judicial reasoning on the facts and circumstances involved, and in placing liability thereunder. An instructive case for gas company executives, charged with inspection and repair of consumers service lines, to have in mind when confronted by situations similar to the one here reviewed.

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Every need of pressure-control in the handling of gas, oil, air, steam, water — for whatever use, by the utility company, the industrial plant, or the domestic consumer — has been provided for in the complete line of C-F Regulators. Weight-and-lever types, spring-loaded types, and pilot-operated types are specifically adapted for the accurate and reliable control of either high or low pressures, under varying conditions. Write for complete catalog.
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Synthetic Rubber. Featured by four tables, which contain data enough to answer almost any question on the subject, The B. F. Goodrich Company, Akron, Ohio, has published an eight page catalog section on its Ameripol D Synthetic rubber, used in making mechanical rubber products.

Plentifully illustrated with pictures showing mechanical rubber products made with Ameripol D, the folder discusses in detail its properties, hardness, tensile strength, elongation, weight, color, odor and taste, elasticity and permanent set, tear and abrasion resistance, and resistance to flexing, oils and solvents and heat.

Controllers. Catalog 4050 of The Bristol Co., Waterbury, Conn., contains 32 pages of timely and useful engineering information on the theory and practice of modern-day automatic control of temperature, pressure, vacuum, flow, flow ratio, draft, absolute pressure, humidity, liquid level, pH value, and time program. In order to enhance the value of the new catalog as an engineering reference book, it is liberally illustrated with line drawings to plainly show the principle of operation and method of installation.

England Worked Out Air Raid Protection Step By Step

(EDITOR'S NOTE: J. J. Carr, member of Dallas Gas Sales Department, lived in London for nine years prior to the war between Great Britain and Germany as an advertising man representing American products. He returned to this country in June, 1940, and went to work for Dallas Gas Company two months later.)

By
J. J. Carr

LIVING in London prior to the outbreak of the present war, I was in a position to observe many of the arrangements made to attune the civilian population to the abnormal conditions of war.

The meeting of Chamberlain and Hitler at Munich was past history, a meeting in which Chamberlain had played to perfection the role of simpleton to gain for his country the vital element of time.

Preparation for the defense of civilian life began in earnest. Recognizing the fact that fear is simply a lack of knowledge, of not knowing what to do in a given situation, the authorities compiled a booklet of instructions on what to do should an air raid take place and these were sent to every household in the country.

Lessons learned in the Spanish civil war proved that a high percentage of all casualties were caused by flying shrapnel, more than by direct hits. Protection, therefore, to the householder was devised by the distribution of home shelters, made very much on the principle of our storm cellars, except that the roof was corrugated steel, banked up with the earth dislodged by the digging of the shelter. The shelter was placed some distance from the house, usually in the back garden.

This method of protection applied only to those living in cities, and the shelters were distributed free to those of limited financial incomes. They were sold at a standard price to those who could afford to pay.

Issued Gas Masks Free

The next problem, that of an attack by gas, was tackled by the issuance of gas masks free. Each householder and his family reported to local schools after the usual work hours and were fitted with masks and given instructions as to their use. The question of how to put a gas mask on a new-born baby was one of the problems but a method was introduced that gave complete protection. A device was arranged to completely cover the baby to protect it in the presence of gas and yet to allow the usual wriggling and twisting of a normal healthy baby.

Every householder had to have baskets of sand available to put out incendiary bombs; to learn how to decontaminate a house should a gas bomb fall in the vicinity; to understand that food could be affected; and how to store essential foods in air-tight containers.

Having taken the necessary steps for the protection of the home, the second move was to provide protection for those caught in the street, at work, or any place away from home during air raids.

In all parks and open spaces in the cities, trenches were dug and concrete and steel shelters were erected. Signs were placed in streets with arrows pointing in the direction of the nearest shelter. Basements in large firms were cleared out, all windows sandbagged, and buckets of sand and water placed at convenient places. Fresh drinking water in containers was always placed in protected spots in the basement.

Underground Railways Invaluable

In London the population had learned the value of the underground system of railways as a protective measure against raids in the first World War. The vital elements of warmth and light were present, together with the fact that the air purification systems worked efficiently and finally that most railway stations were from 80 to 120 feet underground.

Having attempted some measure of protection for the individual, the problem of protection of the masses was instituted. The blackout was introduced, beginning simply with instructions to everybody to eliminate all signs of light that might be seen from above. All electric signs, skylights, store window lights, entrances to places of business open at night, such as hotels, restaurants, etc., were darkened. Street lights were fixed with shades in order to throw the light down, and were operated from a central switch. Curbs in streets were painted white. All obstructions in streets, such as lamps and posts, were painted with white streaks. An immense demand was caused for the electric torch light and instructions were given on how this should be used in crossing roads to shine it down not up, and not in the faces of drivers of automobiles. Steps were taken to enroll all doctors and nurses available for duty in an emergency.

Siren Sounds Were Signals

Special arrangements were made in hospitals to set aside wards for casualties, fully protected by sandbags and having a separate lighting system. Auxiliary services in the police and fire departments were introduced. All taxicabs were auxiliary fire engines, having one or two lengths of hose attached to each one. These very mobile units proved to be of great value. Air raid wardens or watchers were then formed. Each street would arrange that two or more of its inhabitants would be in communication by phone to the nearest police department where, on receipt of a warning by military authorities, information would be passed on to wardens and thence to all residents of the neighborhood.

The introduction of the siren, and its particular wails were made known to all. Thus, from the time of Munich up to the actual outbreak of hostilities, the British people passed from the rehearsal to the actual performance without panic or shock.

—From January, 1942, issue of Blue Blaze News.

High Pressure Hose. A four-page catalog section on high pressure hydraulic control hose issued by The B. F. Goodrich Company, Akron, Ohio, is available upon request to the manufacturer.

The catalog section describes the functions of hydraulic control hose and uses of the product. Commonly used and special sizes are listed in tables, as well as couplings, spring guards and adapter unions.

A formula for figuring the correct bending radii for various sizes is included.

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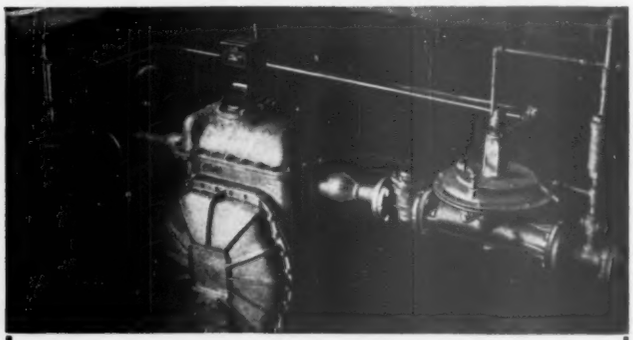

(Photograph of actual plant installation)

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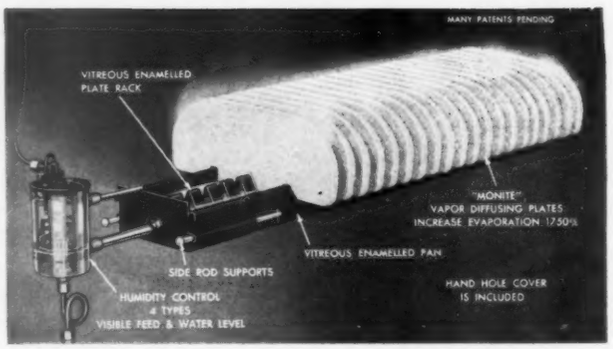
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W. P. B. Priority Rulings

Individual priority ratings extendible by simple endorsement, under Regulation No. 3; new forms mandatory after March 1

Assignment and extension of individual preference ratings has been simplified and made more uniform by Priorities Regulation No. 3 announced January 12 by Priorities Director Nelson.

Rating Extended by Simple Endorsement

Beginning February 2, 1942, individual preference ratings of the type which has heretofore been assigned on PD-1 and PD-3 forms may be extended to suppliers and subsuppliers of the producer who receives the rating by a simple endorsement on purchase orders, like that now used for extension of limited blanket ratings and ratings under the Production Requirements Plan.

Under an arrangement between the director of Priorities and the Army and Navy Munitions Board, ratings assigned by Army and Navy field officers will no longer be limited to items appearing on the Army and Navy Priorities Critical List. However, under Regulation No. 3, extension of individual ratings will be limited to material which will be physically incorporated in the items originally rated.

Simplified Forms Available Soon

Two new forms of Preference Rating Certificates, PD-1A and PD-3A, will replace the present forms, PD-1 to PD-5 inclusive, for assignment of individual ratings. Use of the new forms will be optional on and after February 2 and mandatory on and after March 1.

Form PD-1A which will replace Form PD-1 is a simplified blank to be used in making specific applications for materials or supplies when general preference orders do not provide the required priority assistance. When PD-1A applications are approved by the OPM Priorities Division, ratings will be assigned on the form itself. A similar procedure has been standard for some months. Form PD-2, which was formerly used to assign ratings in response to applications on PD-1 forms, will disappear and will not be replaced.

Preference ratings assigned to applicants who use Form PD-1A may be extended on and after February 2 to suppliers and sub-suppliers of the applicant by the prescribed endorsement on purchase orders, signed by a duly authorized representative of the company making the extension, and will not require a countersignature from any Government officer. Heretofore, preference ratings asigned on PD-1 forms have not been extendible under any circumstances.

Form PD-3A will be used for all applications for ratings in connection with orders from the Army, Navy, Coast Guard, Maritime Commission, Coast and Geodetic Survey, Panama Canal, National Advisory Committee on Aeronautics, Civil Aeronautics Authority, Office of Scientific Research and Development, Procurement Division of the Department of the Treasury, Surplus Marketing Administration of the Department of Agriculture. and contracts or purchase orders from foreign governments. It will replace Forms PD-3, PD-4, and PD-5.

Ratings assigned on Form PD-3A may also be extended to suppliers and subsuppliers without countersignature. Ratings which have been assigned on PD-3 forms were formerly extendible without countersignature only if the amount of the order involved was less than $500.

When an individually rated order is served upon a supplier by the original applicant under the new procedure, the rating may be extended by the supplier, by his suppliers and subsuppliers to obtain any material which will be delivered to the original applicant in accordance with the rating, but neither the applicant, his suppliers, nor subsuppliers may use the rating to obtain machinery or capital equipment which they use in fabricating parts to fill the order. If producers who have been assigned a rating on a PD-1A form need machinery or capital equipment for this purpose which they cannot obtain without priority assistance, they must apply for a separate preference rating on another PD-1A form. Prime contractors who need machinery or equipment to be used exclusively in filling Army and Navy orders may be given a rating for use in obtaining such machinery or equipment on PD-3A forms.

To Replace Inventories

Another important change made by Priorities Regulation No. 3 allows the recipient of an individual rating, his suppliers and subsuppliers to employ the rating for replacement in inventory of materials used in filling the rated order, provided such replacement does not increase inventories above a practicable working minimum.

If the materials to be replaced are in whole or in part manufactured, processed, assembled, or otherwise physically changed by the supplier, the rating must be extended while the materials are in process of fabrication. For materials which are not processed or otherwise changed by the supplier, extension of the rating may be deferred up to three months until an order can be placed for the minimum quantity procurable on customary terms. This provision is primarily for the benefit of wholesalers and distributors, enabling them to group their own orders while making deliveries in small quantities.

Single Purchase Order or "Basket"

The new regulation also allows a supplier or subsupplier who has received two or more purchase orders bearing ratings of the same grade to include in a single purchase order or "basket," within the limitations which have been indicated above, any or all of the material which he requires to make deliveries in accordance with the rated purchase orders which have been served upon him. In such case, he must specify in the certification on his own purchase order all of the Preference Rating Certificate form numbers and serial numbers referring to the orders in connection with which he is extending the ratings.

Records and Reports Required

All persons who receive or extend preference ratings assigned on PD-1A and PD-3A forms must keep records as prescribed by Priorities Regulation No. 1 and make such reports as may be required by the director of Priorities. Use of PD-3A forms may also be subject to such further requirements as may be set forth by the Army and Navy Munitions Board with the concurrence of the director of Priorities.

Preference Rating Certificate Form PD-1A may be reproduced in blank by or for any user, but Preference Rating Certificate Form PD-3A may not be reproduced. PD-1A forms may be procured from the Priorities Division of the Office of

Production Management either in Washington or in field offices. PD-3A forms may be procured from contracting and procurement officers of the Army and Navy.

Copies of the new forms will not be distributed to applicants by the Office of Production Management or the Army or Navy until immediately before February 2, 1942.

Natural Gas Shortage Serious in Nine States; Consumers Asked to Aid War Plants by Conserving

The Office of Production Management on January 8 issued an urgent appeal asking all consumers of natural gas in nine States, mostly in the Middle West, to cut their consumption as much as possible during the current cold wave in order to make gas available for war production plants.

When residential consumers increased their consumption as the temperature went down rapidly, the shortage became serious in Illinois, Indiana, Ohio, Pennsylvania, West Virginia, Western New York, Michigan, Kansas, and Missouri.

The cities where the shortage is serious and where residential consumers can help, include Dayton, Cincinnati, Pittsburgh, Cleveland, Buffalo, Binghamton, Detroit, Columbus, and Chicago.

How Consumers Can Help

Residential consumers can help make gas available for war in the following ways:

1. Keeping room temperatures down as far as possible, if gas is used for heating, by proper adjustment of thermostats.

2. Closing off heat in all unoccupied rooms.

3. Using gas ranges, water heaters and other gas appliances as little as possible.

4. Any other methods which will diminish the use of heating gas.

The gas saved by such methods in the average home amounts in the aggregate to a considerable quantity. It is needed for maintaining capacity production of heavy industrial plants producing war materials. And every day's production is vitally necessary in the new 1942 production effort outlined by the President.

The OPM said that citizens' cooperation in this conservation effort will amount to a direct contribution to the war effort until the cessation of the cold wave relieves the situation.

Lead Forbidden for Many Uses After April 1, Curtailed Immediately

Sweeping restrictions on the use of lead were ordered January 10 by Priorities Director Nelson, with the issuance of Conservation Order M-38-c.

The order follows the pattern of the copper and tin conservation orders, prohibiting the use of lead in a list of civilian manufactures and curtailing the amount to be used in more essential ones.

The lead order provides that after April 1st, 1942. the metal must not be used in a long list of articles, none of which appear to affect the gas industry directly. From January 1 to March 31 uses of lead for these items must be restricted to 50 per cent of the amount used in either the third or fourth quarters of 1941.

Most other users of lead are restricted, by quarters, to 90 per cent of the amount used in either the third or fourth quarters of 1941. Gas company use would probably fall in this group.

No restriction is placed upon the use of lead in military contracts, or for certain other Government agencies; where it is called for in underwriter or safety regulations, on preference rating of A-1-j or higher, for use in manufacturing plants where corrosion makes lead imperative; in scientific and industrial laboratories and hospitals where chemical action would make its use necessary, or in certain other important items.

Reason for the order is the increasing demand for lead caused by greater military and naval requirements and the shift to lead caused by the shortages in more critical materials. Approximately two-thirds of the available monthly supply, including scrap, now is demanded for ratings of A-10 or higher

Conditions for Reproducing Priority Forms

The Division of Priorities on December 12 issued the following statement relating to the reproduction of official forms and orders.

Reproduction of Priorities Division forms and orders is permitted *only* in accordance with the following instructions:

Any application form, including form PD-1, may be reproduced.

Any report form, including inventory report forms, may be reproduced.

Any "M" order, "L" order, or "E" order may be reproduced.

As to "P" orders, two rules are to be followed:

1. If the order is issued to a general class of persons, and does not name any individual as the recipient of the order (as is the case in P-22, the Maintenance and Repair Order) the order may be freely reproduced in the same manner as "M" orders.

Limits on Individual "P" Orders

2. If the "P" order has been issued

Priority *in gas purification* earned by
a quarter-century of reliable performance,
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for the use of specifically named firms or individuals, it may be reproduced for use either by the individual producer or by his suppliers who are entitled to use the order, by the photo-offset or similar photographic process. Such copies must be identical in size and every other respect with the order as issued by OPM. Blank forms of "P" orders may be reproduced for informational purposes only when they are stamped "Specimen" or "Sample," so as to make it clear that the copy is for information only and not for use.

The purpose of these rules is to permit reproduction of forms and orders for (1) informational purposes, or (2) for purposes of applying for priority assistance, or (3) furnishing information to the OPM —but also to prevent reproduction of forms and orders which might lend themselves to improper use.

Whenever any form required by the OPM is reproduced, for whatever purpose, it must be reproduced in the exact format, language, color, type, size, and phraseology of the original.

* * *

Reproductions of Some Orders Governed by Special Rules

The Division of Priorities issued December 15 the following additional statement relating to the reproduction of "P" (blanket preference rating) orders:

The general instructions permitting qualified persons to reproduce "P" orders, by photo-offset or similar photographic process, do not take precedence over any specific instructions or regulations which have been issued in connection with any specific order.

In the case of P-7, for example, issued to ship builders, specific instructions state that copies of the order must not be reproduced by ship builders, rated subcontractors or suppliers, but that all copies to be used must be obtained from the chief of the Priorities Administration Branch of the United States Maritime Commission, Social Security Building, Washington, D. C.

Similar instructions have been given in connection with P-14-a and P-14-b, issued to ship yards.

Whenever such specific instructions have been issued, it was explained, they are to be followed. When this has not been done, however, the general instructions (in PM 1761) relating to "P" orders should be followed.

Further Priority Assistance to Petroleum and Natural Gas Industries

Priority assistance was extended to all branches of the petroleum industry by Preference Rating Order P-98 issued January 14, 1942, by the Director of Priorities.

The order assigns priority ratings from A-1-a to A-10 for deliveries of materials to be used for specified purposes in the production, refining, transportation and marketing of petroleum and petroleum products. Ratings are also assigned for the production and certain types of transportation of natural gas.

At the same time, the construction of new facilities or improvement of existing facilities, including filling stations, for the marketing of petroleum or petroleum products is forbidden by Conservation Order M-68-c, except when specific permission is granted by the Director of Priorities. However, construction or improvement which was begun before the effective date of the order and which will be completed within 60 days may be carried out. Otherwise exceptions will be made only when the Director of Priorities finds that new construction or improvement is necessary to promote the war effort.

Conservation Order M-68 issued previously has been amended today to permit the completion of wells in process of drilling at the time when the order was issued, December 23, 1941. The purpose of this amendment is to prevent the waste of material in place or already used in drilling operations.

Another amendment to Conservation Order M-68 forbids the drilling of wells unless there has been a consolidation of all separate property interests within the 40-acre area surrounding the drilling operation. This amendment protects small property interests which might be jeopardized by the well-spacing requirements while keeping the spacing requirements in effect.

A number of other minor changes have been made in Conservation Order M-68 to bring it into conformity with Conservation Order M-68-c.

General Preference Order P-98 assigns a rating of A-1-a to deliveries of materials to operators engaged in refining for use in the repair of equipment when there has been an actual breakdown of operations. Ratings of A-2 or higher assigned by the order, including the A-1-a rating, may be used only when the materials are not otherwise available, and before they are used, specific permission must be obtained from the Director of Priorities upon application through the Office of Petroleum Coordinator in Washington. Application may be made by telegram.

Lower ratings are assigned to deliveries of materials for repair, maintenance and operating supplies used in other branches of the industry. These ratings may be applied by a prescribed endorsement on purchase orders signed by a duly authorized official, but the endorsement must also be countersigned by the Director in Charge of the nearest District Office of the Office of Petroleum Coordinator.

The Secret of Preparedness

"The cause of the present preparedness of the Central Powers is the system that has been used in Prussia since 1640, when the Great Elector, impressed at the age of 20 by the deplorable condition of Brandenburg, started to reform it. His first step, and his continuing policy thereafter, was to insist that the head of every department should be a trained expert, and that he should labor unremittingly to improve his department . . . . The same system has continued without pause and is now in operation at full speed."

These are the words of Rear Admiral Bradley A. Fiske, U. S. A., taken from an article that appeared in the *Independent*. They show how simple, after all, the way to efficiency and preparedness really is. All that is necessary is to place at the head of each department a trained expert and put it up to him to make his department the best department in the organization.

There is no question but that this system has worked in Prussia. From an insignificant weak power it has grown to be one of the most prominent and the strongest in Europe. Everyone will admit that this is due almost solely to the efficient organization of its government and its industries.

(*From the March 31, 1917, issue of the American Gas Engineering Journal, and as true today as it was then.*)

Dollars and Materials saved For Defense

The Republic Conversion Burner and the Republic Conversion Water Heater both make use of the equipment now owned by the customer. Both units prolong the life of this equipment, conserve fuel and render better service.

Defend the Fuel Supply—
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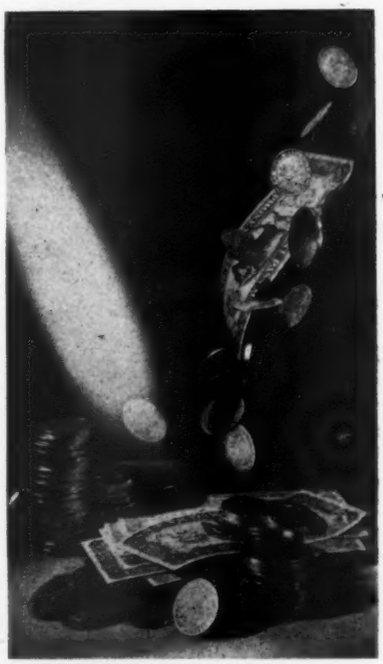

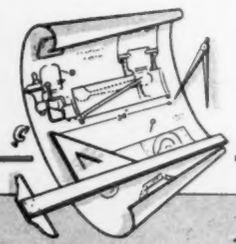

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"The material has stood up so well that it has been necessary to replace but very little."

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Every day more and more gas companies are demonstrating the remarkable economy of Connelly Iron Sponge. This remarkable product, of extra high capacity, is guaranteed to meet every requirement efficiently and economically. Its unusually long life, remarkable revivifying properties and low maintenance expense reduce purifying costs to the absolute minimum.

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Send a sample of your used material and give us an idea of the required capacity. We will gladly make an analysis and submit unbiased recommendations without cost or obligation.

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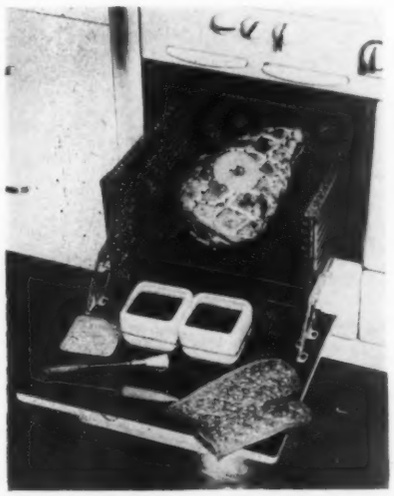
New Equipment and Appliances

Roper Broiler "Bar-B-Q"

A complete skewer roasting ensemble is introduced by George D. Roper Corporation, Rockford, Ill., for use in the 7300 series of Roper gas ranges. It consists of a long skewer and skewer support so that



Roper Broiler "Bar-B-Q"

the meat may be turned every few minutes and various accessories including two pottery sauce dishes, asbestos mitt, large fork and basting spoon, pastry brush and skewer hook.

The "Glo" broiler burner provides infra-red heat that is fast and penetrating.

A special bulletin with full description and cooking directions together with demonstration suggestions is now available.

3-Stage Gravity Gas Furnace

Supplementing a line of gas-burning air conditioning furnaces which operate on the three-stage principle, with continuous forced circulation, Perfection Stove Company, Cleveland, Ohio, announces a new gravity-type warm air gas furnace with three-stage fire, known as the Super-comfort Superfex Sixty.

The three stages are, high fire, which is a booster fire and uses two burners; low fire, which is a coasting fire and uses one burner, and pilot fire, which is a tiny jet flame.

The furnace is 23 inches wide and 32 inches deep with a dual multi-port burner and a large round

Gravity Gas Furnace

combustion chamber having twin double pass vertical radiator. The return air opening is in a side panel, and the two side panels are interchangeable.

Gas input is 85,000 B.t.u.; output at bonnet, 63,750 B.t.u.; leader pipe area 450 square inches. This rating is based on 50% to first floor and 50% to second floor distribution.

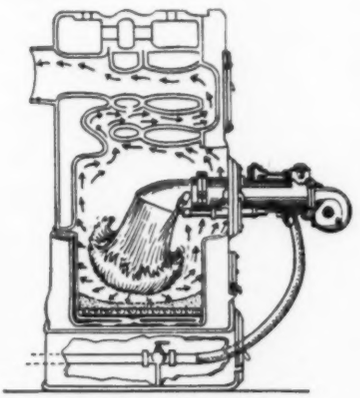
Shipped as a package unit, complete with factory wired and tested automatic controls and manual drip humidifier.

Wabash Blackout Bulb

"Onadoor" Gas Burner

Designated as No. G-100, Tropicalheat Engineering Inc., 4320 E. Lake Street, Minneapolis, describes a gas burner for central heating installations in a recent bulletin.

The burner as shown, is installed through the door of a furnace designed for solid fuel so that grates do not have to be removed. Burner heat is forced to the side walls as indicated.



Automatic Gas Burner

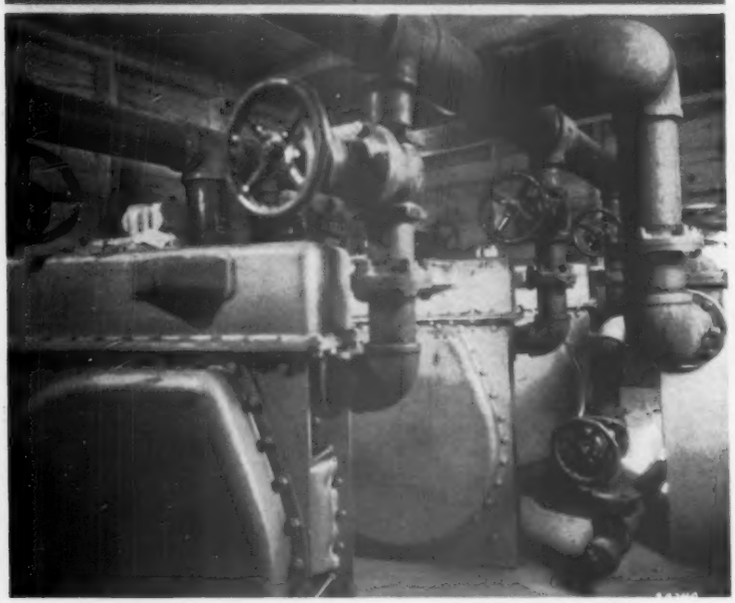
The burner casting has a flange which bolts to the firing door. A 1/25 hp. split phase motor supplies the air to force the flame downward. As the gas and air mixture passes out the elbow it is ignited by the gas pilot shown. The burner is provided with the usual safety features. Bulletin on request.

Blackout Bulb

Designed for blackout lighting in air raids, a new Wabash blackout bulb is made by the Wabash Appliance Corporation, 345 Carroll Street, Brooklyn, N. Y. It provides downlighting in a soft beam of blue light that is safe for indoor visibility during blackouts. The bulb is lined inside with a pure silver reflector lining that hides all filament glare and projects the light downward. Light leaks are prevented by a black silicate coating that covers the bulb up to the extreme lighting end which is a deep blue.

Gas Heat for Recreational Group in St. Louis

By
Jimmy Kearns
St. Louis, Mo.



Upper:—General view of Recreation Camp at Forest Park, St. Louis, Mo. Lower:—The three meters of 10,000 cu. ft. hourly capacity at pressure station.

NEW EVIDENCE of the adaptability of gas to any and all heating problems can be found at a U. S. Army Recreational Area recently completed in Forest Park, St. Louis, Mo.

Here gas supplies heat for the 180 tents, with a capacity for 1,080 men. It is used also to heat water for the five bath houses, for cooking and water heating at the recreational pavilion in the center of the camp. While gas radiant circulators are used for the sleeping rooms, the bath houses are heated with unit type circulators suspended from the rafters.

The water heaters which now supply hot water for bathing and shaving are storage type heaters with booster hookup tanks with a capacity of 250 gallons. The storage heater proper has a recovery of 140 gallons per hour.

Gas is supplied to the camp through a six-inch high-pressure main, connected to Laclede Gas Light Company's high pressure main at Kingshighway and Gibson Street.

Gas for use by the camp proper is measured through three meters of 10,000 cubic feet capacity per hour, each, while gas for the concessions in the recreational pavilion is measured through a smaller meter of 800 cubic foot capacity. These meters are housed in a small concrete and frame structure near the center of the camp. The meter installations are mostly below the level of the street. Pressure is reduced through a governor located in the meter house.

The camp at Forest Park is in command of Colonel Thomas L. Leigh and is one of three such camps in the state. It is being erected by the Civilian Conservation Corps for the use of soldiers who are visiting St. Louis while on leave from the regular army camps.

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News of the Gas Industry

Philadelphia Company Announces Executive Changes

Frank R. Phillips, President of the Philadelphia Company and Subsidiary Companies of Pittsburgh, Pennsylvania, has been elected to the position of Chairman of the Board and Chairman of the Executive Committee following his resignation as President of the Company.

Leo T. Crowley, a member of the Board of Directors, was elected to succeed Mr. Phillips as President of the Philadelphia Company and Philip A. Fleger, General Attorney, was elected to position of Senior Vice-President of the Company. The election took place at special Stockholder's and Board of Directors meetings held in Pittsburgh January 20th.

At a special meeting of the Board of Directors of the Equitable Gas Company and the Pittsburgh and West Virginia Gas Company, Franklin F. Schauer was elected President of these companies, and D. P. Hartson was elected Vice-president and General Manager of the companies.

Philip A. Fleger came to the Company in 1926 and served as an attorney in the Law Department, and assistant general attorney from that time to 1939, when he was made General Attorney for the companies.

Franklin F. Schauer entered service with the Company in July, 1920, as Assistant General Manager of the Equitable Gas Company. Since that time he has served as General Service Manager of the Philadelphia Company; General Manager of the Equitable Gas Company and in 1929 was named Vice-President and General Manager of the Equitable Gas Company.

D. P. Hartson entered service with the Equitable Gas Company in October, 1920, as a distribution engineer. He was then made Gas Engineer, Superintendent of Production and Transportation; Manager of the System Development Department and in 1931 was made Operating Manager of the Equitable Gas Company and the Pittsburgh and West Virginia Gas Company.

A.G.A. Committee on War Activities

Appointment of a seven-man committee on war activities to replace a forty-seven-man defense group set up by the American Gas Association in May, 1940, is announced by President George S. Hawley, of Bridgeport, Conn. The new streamlined committee, headed by Ernest R. Acker, president, Central Hudson Gas and Electric Corp., Poughkeepsie, N. Y., will function in an executive capacity in an emergency and will also act as a clearing house and coordinating body for all defense material and in all Association activities pertaining to the gas industry's part in the conduct of the war. All sectional committees of the Association handling specialized matters relating to defense will report to this committee.

Others on the committee are Arthur F. Bridge, vice-president, Southern Counties Gas Company, Los Angeles; Henry R. Cook, Jr., vice-president, Consolidated Gas Electric Light & Power Company of

HUTCHINSON GAS CLUB AT ANNUAL CHRISTMAS LUNCHEON

The annual Christmas Luncheon of the Club formed by the late "Bill" Hutchinson of Bridgeport, took place at Busto's Restaurant, Stone Street, New York, December 22nd, celebrating its 10th Anniversary. When the roll was called, six of the original eighteen members were present.

Chairman Lockwood read a telegram expressing the good wishes of George S. Hawley, President of the American Gas Association, who was unable to attend.

Seated—Front Row Left to Right: J. R. Wohrley, Electric Advisers, Inc.; S. P. Cobb, Ebasco Services, Inc.; S. Green, Brooklyn Union Gas Company, Brooklyn; H. W. Springborn, Robbins Publishing Co. (Gas Age); C. I. Crippen, Penn-Western Service Corp.; J. F. Anthes, Brooklyn Union Gas Company, Brooklyn; K. E. Crenshaw, Gas Advisers, Inc: C. A. Lunn, Consolidated Edison Co.; V. A. Ogilvie, Gas Advisers, Inc.; all of New York.

Seated—Center Row Left to Right: Rutherford Van Vliet, N. Y. & Richmond Gas Co.; A. D. Harrison, Brooklyn Union Gas Company, Brooklyn; H. O. Andrew, Robbins Publishing Co. (Gas Age); Dean M. Workman, Ebasco Services Inc.; E. J. Murphy, Brooklyn Union Gas Company, Brooklyn; C. S. Goldsmith, Brooklyn Union Gas Company; Ray Ransom, Panhandle Eastern Pipeline Company; all of New York.

Standing—Back Row Left to Right: E. S. Davis, Brooklyn Borough Gas Company, Coney Island; J. G. Sweeney, Brooklyn Union Gas Company, Brooklyn; A. E. Lindquist, (Gas Age); A. I. Phillips, American Gas Journal; W. H. Weber, Brooklyn Union Gas Company; A. R. Belyea, Consolidated Edison Co. of N. Y. Inc.; all of New York. F. L. Fairchild, Sprague Meter Company, Bridgeport, Conn.; H. D. Hancock, Gas Advisers, Inc.; Alan E. Lockwood, Penn-Western Service Corp.; E. P. Noppel, Ebasco Services, Inc.; W. C. Beckjord, Columbia Gas & Electric Corp.; J. A. Brown, The Commonwealth & Southern Corp.; S. J. Beale, West Gas Improvement Company; O. S. Hagerman, Atlantic Seaboard Corp.; Ross Holmes, N. Y. Public Service Commission: F. B. Parke, Brooklyn Union Gas Company; G. H. Magee, Long Island Lighting Company, Garden City, Long Island, all of New York. A. Gordon King of A.G.A. Headquarters was present but not shown as he took the photograph.

Baltimore; J. H. Gill, president, United Gas Corporation, New York; J. French Robinson, president, The East Ohio Gas Company, Cleveland; and Marcy L. Sperry, president, Washington Gas Light Company, Washington, D. C. Mr. Hawley will serve ex-officio.

A.G.A. Cooperates to Inform Its Members of Available Surplus Equipment

The American Gas Association has announced that it will act as a clearing house for its members by putting material or equipment, unneeded by one utility into service elsewhere in the industry, thereby avoiding unnecessary manufacture and thus hampering defense production by using priority assistance to obtain these articles directly from the producer.

For example, we are informed that one gas company has a large amount of bell and spigot pipe which is unusable so far as that locality is concerned. We are also aware of the existence of direct current motors which will never be used by the present owners but may be useful elsewhere.

Other companies may have good compressors and blowers on hand that have been replaced with larger units or with those of a different type. It is possible that some companies, recently changing over from manufactured to natural gas, may have complete generating sets or important parts of the same which they may wish to dispose of and which other companies may wish to obtain.

This activity should begin at once and the Association is ready to give publicity within the industry to the existence of any such available stock of any kind or description. The Association will not undertake sales or exchanges but will act only as an exchange of information between companies holding stocks unusable to them, and companies which may desire to obtain the same type of material.

The New England Gas Association inaugurated such an activity last summer and has continued it since then with results which are reported to have been highly satisfactory and beneficial to its membership.

Dresser Industries in National Defense

Devoted largely to a pictorial survey of activities in their plants, a Dresser brochure entitled "Dresser Industries in National Defense and Civilian Service" has been recently issued.

It tells the story of how Dresser at Bradford, Bryant Heater at Cleveland, Clark Bros. Co. at Olean and Pacific Pump Works at Huntington Park are geared to the needs of all-out national defense. It also features the part these industries play in civilian welfare in vital services of gas, oil, water, etc.

A copy will be sent to any interested party who writes Dresser Manufacturing Co., Bradford, Pa.

CONSOLIDATED EDISON INSTALLS EMERGENCY FIRE FIGHTING CABINETS

Seventy-eight emergency cabinets like this one have been installed near the roofs of commercial buildings owned and operated by the Consolidated Edison System in New York City to cope with possible fires caused by incendiary bombs. One hundred and fifty of the System's Commercial Buildings employes have received intensive training in the use of the equipment in the cabinet and an additional 1,450 employes also have been instructed in its use in case of emergency. Inquiries from a number of other large corporations indicate that Consolidated Edison's cabinet is serving as a model for similar installations throughout the city. The cabinet contains—1 asbestos blanket 4′ x 8′, 1 asbestos blanket 9′ x 9′, 2 metal sugar scoops, 1 36′ wrecking bar, 1 8# sledge hammer, 5 bags sand, 1 block and fall and 200′ ¾″ rope, 2 pairs asbestos gloves 16″ long, 2 long handle square nose shovels, 2 pairs safety goggles, 3 water pails, 2 helmets, 2 emergency lights, 1 large First Aid kit, 1 stirrup pump, 3 fire pails, and 1 fire axe.

California Institute of Gas Heating Industries

The Institute of Gas Heating Industries of Southern California has expanded its activities by employment of a full-time executive secretary and establishment of a central office.

Fay O. Suffron has been appointed executive secretary and will direct Institute affairs from headquarters established in December at 1709 West Eighth St., Los Angeles.

For the past 11 years Mr. Suffron has been affiliated with the American Gas Association Testing Laboratories, during which time he served three years as supervisor of the A. G. A. Pacific Coast branch at Los Angeles.

Mr. Suffron will direct the instrumentation of the three major objectives which the Institute has scheduled for its 1942 program. These are the full co-operation of the gas heater manufacturing and installing industry with the Defense Program; the correlation of Institute affairs to serve as a clearing house for priority information; and working toward a uniform code for communities in Southern California.

B. F. Goodrich Co. Issues Truck "Operator's Handbook"

In view of the importance of rubber-shod motor trucks to America's war effort a booklet just published by The B. F. Goodrich Company and providing new data on obtaining maximum service from truck tires, is of particular interest. The booklet is available at no charge to truck operators upon request.

Main feature of the publication, because of the vital need of tires to keep the nation's 4,590,000 trucks rolling, is a 15-page section dealing with "Factors Governing Truck Tire Service."

Indicative of the role these vehicles, ranging from the half-ton delivery trucks to mammoth highway freighters, may be expected to play is the fact that as yet there's been less restriction on the production and sale of truck tires, than on passenger car tires for civilian use.

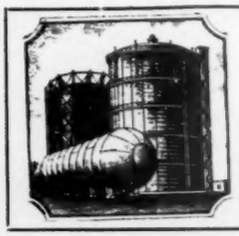
Included in the special section of the booklet, are charts and tables showing the value of proper inflation and loads, the dangers in over- and under-inflation, mis-matching of dual tires, causes of uneven tread wear, and the effect of overloads and excessive speeds in generating heat, prime enemy of rubber.

These and other factors are summarized in 20 practical rules showing truck operators how to obtain maximum service life from their truck tires, in the interest both of rubber conservation and the uninterrupted movement of raw materials and finished goods required by America's armed forces, war industries, and civilian needs.

N. B. Bertolette Joins A.G.A. Laboratories

Filling the vacancy caused by the resignation of N. T. Sellman, Assistant Vice-President of the Consolidated Edison Company of New York, Inc., Norman B. Bertolette, President and General Manager of the Hartford Gas Company, was recently appointed a member of the Laboratories Managing Committee. He is the first executive from the New England area to become a member of this group.

Mr. Bertolette's activities in the gas industry and in the American Gas Association are well known as the result of more than 30 years varied experience in utility company management and operation.



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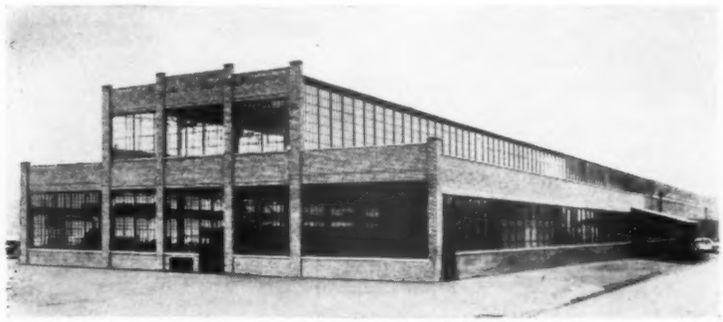
Eastern Office: 21 West St., N. Y. C.



EXTENSION TO CLARK PLANT FOR MARINE ENGINE MANUFACTURE

The 200-foot extension, shown above, to the Clark Bros. Co. plant at Olean, N. Y., has just recently been completed to house the manufacture of a large triple-expansion marine steam engines, in connection with the government's defense program.

The new marine engine is the largest Clark has ever built, the 2,500 H.P. unit being 22 feet high, 23 feet long, and 16 feet wide. Stroke is 48" and speed 76 R.P.M.

16th Annual Mid-West Regional Gas Sales Conference

Plans are practically completed for the 16th Annual Mid-West Regional Gas Sales Conference which will be held at the Edgewater Beach Hotel in Chicago on Monday and Tuesday, February 23 and 24.

J. C. Sackman of the Northern Indiana Public Service Company, Hammond, Indiana, states that hotel reservations are coming in in as great a volume as last year, which seems to indicate that present abnormal conditions have in no way reduced the need of the meetings.

The theme of this year's Conference is "Now You're Cooking With Gas." The entire program will be built around the implications of this very highly publicized witticism.

In line with the Committee's policy to have as part of the program the best talent from without the industry, this year's visitors to the Conference will hear W. A. Patterson, President of the United Air Lines; Carlyle Emery, Vice-President, Ruthrauff & Ryan, Advertising Counsellors, and two others equally well known nationally but since their final acceptance has not yet been received, their names are being withheld.

Amongst the industry's speakers will be George S. Hawley, President, American Gas Association; Louis Ruthenburg, President, Servel, Inc.; Davis M. DeBard, Vice-President, Stone and Webster Service Corporation; Emil C. Sorby, Sales Production Manager, Geo. D. Roper Corporation; John Bogan of the A.G.A.E.M., and Watson E. Derwent, also a representative of the A.G.A.E.M.

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New Valve and Meter Offices On West Coast

San Francisco and Seattle have been selected as locations for new sales and engineering offices by Merco Nordstrom Valve Company and Pittsburgh Equitable Meter Company. According to an announcement by Captain A. E. Higgins, Vice President, these offices have been opened as a part of the expansion activities of the two companies to give increased service on the West Coast. Russ Waters has been appointed branch manager of the San Francisco office, which is located in the Hobart Building, 582 Market Street. He will be assisted by Fred D. Webster, R. L. Ford and Gilbert T. Bowman, who for several years have been in the Oakland plant. The Seattle office will be under the jurisdiction of the San Francisco Sales Office. It has been established at 110 West Denny Way, out of which will work Frank P. Tangney and William R. Dominick. Hereafter, sales activities in the Bay District will be directed from the San Francisco office instead of from the companies' plant at Oakland. H. Boezinger, Vice President, is in charge of sales for the entire West Coast.

CONVENTION CALENDAR

February

9–11 *Southern Gas Association and A.G.A. Southern-Southwestern Gas Sales Conference,* Biltmore Hotel, Atlanta, Ga.

17–18 *Eastern Gas Sales Managers' Round Table,* Roosevelt Hotel, Pittsburgh.

March

12–13 *A.G.A. Conference on Industrial Gas Sales and A.G.A. Hotel, Restaurant and Commercial Sales Conference,* Pittsburgh.

16–17 *Wisconsin Utilities Association,* Gas Section, Schroeder Hotel, Milwaukee.

19–20 *New England Gas Association* Annual Convention, Hotel Statler, Boston, Mass.

23-24 *Oklahoma Utilities Ass'n* Biltmore Hotel, Oklahoma City.

April

13–15 *Mid-West Gas Association,* Sioux City, Ia.

19–21 *Gas Meters Association of Florida - Georgia,* Savannah, Ga.

21–23 *Southwestern Gas Measurement Short Course,* Norman, Okla.

May

4– 7 *Natural Gas Section American Gas Association,* Annual Convention, Roosevelt Hotel, New Orleans, La.

5– 7 *A.G.A. Distribution Conference,* New Orleans, La.

11–12 *Indiana Gas Association,* Annual Meeting, Indianapolis.

25–27 *A.G.A. Production and Chemical Conference,* New York City.

June

4– 5 *Canadian Gas Association,* 35th Annual Meeting, Windsor Hotel, Montreal.

September

28 *Pacific Coast Gas Association,* San Francisco.

29th to Oct. 1 *American Gas Association,* Annual Meeting, San Francisco.

Cleveland Heater Company in New Quarters

The Cleveland Heater Company, Air Controls, Inc., and The Patrol Valve Company, all of that city, have established downtown offices and laboratories at 2310 Superior Avenue.

Year's Extension for Approvals Expiring in 1942

To insure that approved gas-burning equipment is kept abreast with modern standards, extension of American Gas Association approval has for some time been limited to a period of 5 years. In view of the present national emergency, this entire subject was recently given very thorough consideration by interested Association committees. Recognizing the difficulties in making constructional changes under present conditions, it was felt that a temporary modification of the present policy was indicated. Agreement was, therefore, reached that an extension of one year should be allowed in the case of equipment certification of which expires during the year 1942. It was expressly understood that such extension was permissible provided that no changes had been made in applicable standards affecting safety since original approval was granted. This action was approved by the Laboratories Managing Committee on recommendation of the Approval Requirements Committee and all manufacturers of approved appliances and listed accessories notified.

Three U. G. I. Officers Retired

The Board of Directors of The United Gas Improvement Company, Philadelphia, Pa., honored three officers of the company, retiring Dec. 31. Those retiring from active service, after many years devoted to U. G. I. and public utility industry affairs, are Vice-Presidents Philip H. Gadsden, Fred J. Rutledge and John H. Hubbs. Resolutions in appreciation of their service were adopted by the Board at its December meeting.

Mr. Gadsden, senior vice-president of The United Gas Improvement Company, has been a U. G. I. man since 1910. His service in the public utility industry began in 1899 at Charleston, S. C., his native city, and have been of such outstanding nature that he has been referred to as "the spokesman of the industry." For his services in the organization and direction of the Commitee of Public Utility Executives, of which he was chairman, he was awarded The U. G. I. Company's Samuel T. Bodine Meritorious Service Award in October, 1935.

Mr. Rutledge began his utility career with the Rockford Gas Light and Coke Company, Rockford, Ill., in 1894. He remained with the Rockford company until 1901, when he resigned to accept a position in the engineering department of the Milwaukee Gas Light Company. After two years in that company's engineering department he assumed charge of the new business department. In 1909 he came to Philadelphia, beginning his U. G. I. service.

Members of the United Savings and Beneficial Association, at the Annual Meeting, January 15, 1940, adopted a resolution of thanks and appreciation to Mr. Rutledge for his services as president of the Association for 16 years.

Mr. Hubbs has spent his entire business life with The United Gas Improvement Company having entered the Purchasing Department in 1890 upon leaving business school. In 1905 he was appointed Assistant Purchasing Agent and in 1934 Purchasing Agent. He has served in a like capacity for nearly all of the companies in the U. G. I. System. In 1937 he was elected a Vice-President of the Company.

New Booklet on Thermostatic Controls for Commercial Cooking Equipment Issued by Robertshaw

Helpful information about the advantages, economies ,and operation of thermostatic controls for commercial cooking equipment is contained in a new 18-page, illustrated booklet just issued by the Robertshaw Thermostat Company. The booklet covers various efficient types of

thermostats for a wide range of equipment.

Devices illustrated and described include three models for gas-heated, and one model for steam-heated coffee urns; four models for gas-heated coffee makers; three models for gas-heated and one for steam-heated steam tables. Six models are shown for deep fat fryers and four for gas-heated griddles. For gas-heated ranges and bake ovens eight models are included, and five for gas-heated and one for steam-heated dish washers and sterilizers. Electric thermostats for the above and for miscellaneous uses are also shown.

The text discusses the installation of all models. It also presents data about savings and improvement in cookery through correct use of heat, based on long series of tests using scientific thermostatic control. Copies of the booklet are available free upon request to Robertshaw Thermostat Company, 30 Church St., New York.

Mid-West Regional Gas Sales Council Conference Cancelled

The Mid-West Regional Gas Sales Council met January 27 in Chicago to give further consideration to the question of whether a Mid-West Regional Gas Sales Conference of the usual type should be held on February 23 and 24 of this year as originally scheduled.

The plans to hold the usual Mid-West Regional Gas Sales Conference on the above dates were set up at a meeting of the Council in Chicago on December 5.

The Council voted to cancel the usual Mid-West Regional Gas Sales Conference in the belief that the holding of the meeting would be regarded by many people within and without the Industry as inappropriate and inadvisable, and that in fact it would be difficult to make a Conference of the usual type effective under today's conditions.

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Progress Award Program of the James F. Lincoln Arc Welding Foundation

Procedure for handling papers on War subjects for submission to The James F. Lincoln Arc Welding Foundation, Cleveland, O., in the $200,000 Industrial Progress Award Program was announced by the officials of the Foundation.

In making the announcement, the Foundation expressed the belief that many persons whose work is involved in the War effort, and whose choice of subject matter for papers is limited to War equipment, may be missing participation whereas they might be enabled to participate by following the procedure suggested.

The many persons engaged in war industry production may be sure that their work is covered in one of the 46 divisions of participation of the Progress Program. If the proper division is not immediately apparent to the person interested in participating by preparation of a paper on some item of war equipment, he may obtain the necessary information by writing the Foundation.

Since the Progress Program closes June 1, it was pointed out by the Foundation that all persons should take the suggested steps immediately in order to clear the way for their participation.

No one, the Foundation said, should conclude a subject of war production not admissible until officially and finally so designated by the proper bureau of the Army or Navy.

Nor should any one assume a paper barred from submission in the Progress Program until an official opinion is given on the contents by the proper bureau of the Army or Navy department concerned.

Persons desiring to participate in the Progress Program, which offers 458 awards ranging from $100 to $13,700 for papers describing advances and improvements resulting from the application of arc welding to design, manufacture, fabrication, construction, welding service or maintenance of any type of machine, building, product or structure, are urged to carry out the various steps as promptly as possible.

In all correspondence asking approval of subject matter on contents of papers, the authors should request prompt attention in order to have the finished paper in the mail on or before June 1st.

Studies submitted in the first Award Program have become basic reference data for welding production of vital machinery and equipment, particularly in high speed production of ships, planes, tanks, gun mounts, etc.

Further study of welding, through the medium of papers submitted in the present Progress Program, it is believed will bring forth new data which will be extremely advantageous in the war effort as well as in peace-time production.

Ceilings on Two Kinds of Oil Set for Gulf and East Coasts

Following refusal on January 9 to permit large oil companies to increase prices on Bunker C and No. 6 grade fuel oil at East Coast and Gulf Coast ports, the OPA on January 20 issued a schedule formally setting ceilings on those grades, according to an announcement by Administrator Henderson.

The maximum prices set are those effective on January 9, f. o. b. refineries and terminals (ex lighterage) as follows:

	Per barrel
Albany, N. Y.	$1.55
New York Harbor	1.35
Philadelphia, Pa.	1.35
Baltimore, Md.	1.35
Norfolk, Va.	1.35
Portland, Maine	1.35
Boston, Mass.	1.35
Providence, R. I.	1.35
Charleston, S. C.	1.30
Savannah, Ga.	1.30
Jacksonville, Fla.	1.30
Tampa, Fla.	1.25
New Orleans, La.	.85
Gulf Coast points not specified above	.85

HARRY C. DEAN

Harry C. Dean, a widely known gas engineer, died January 18th at his home, 802 E. Phil-Ellena Street, Philadelphia, Pa. He was 56 years of age. Mr. Dean, born in Philadelphia, was a graduate of Central Manual Training School and took his Degree of Mechanical Engineer at the University of Pennsylvania.

Mr. Dean spent his entire professional career of 33 years in the manufactured gas industry. He started in the distribution department of the Philadelphia Gas Works Company. From 1915 to 1919 he was in charge of the operation of various gas plants in the U.G.I. system including those at Michigan City, Indiana; Nashville, Tennessee, and Northern Liberties, Philadelphia. Later he accepted the position of plant designing engineer with the U.G.I. Contracting Company and continued in this capacity when the U.G.I. Contracting Company became a part of the United Engineers & Constructors, Inc. He was considered an authority on large gas plant extension problems.

C. R. MILLER

C. R. Miller, a 36-year veteran of Portland Gas & Coke Company, Portland, Oregon, and superintendent of its utilization bureau for the past 25 years, died January 19 after a long illness.

Active for almost a quarter of a century as a member of the Pacific Coast Gas Association, he was a featured speaker at conferences and a contributor of many outstanding reports.

The gold medal honor award of the Pacific Coast Gas Association was given him in 1925 for his "Gas Appliance Installation and Service Manual," a comprehensive study which won wide praise in the gas industry. In the same year he won the association's gold medal award for work as chairman of the home service bureau committee.

Mr. Miller joined Portland Gas & Coke Company as a meter inspector November 10, 1906. On July 2, 1909, he was advanced to supervisor of collections. On January 1, 1917, he was named superintendent of the utilization bureau, which position he held until his illness forced him to retire a year ago.

Heat Control. The Bristol Company of Waterbury, Conn., has prepared a new bulletin (1DS28) which describes an Automatic Heating-Cycle Control System in operation on furnaces for annealing malleable iron castings.

The bulletin is illustrated and describes the cycle of operation, instruments, control valves, and safety devices.

Diesel Engines. Bulletin B38A of Worthington Pump & Machinery Corporation describes their DD four-cycle type Diesels for continuous heavy duty loads.

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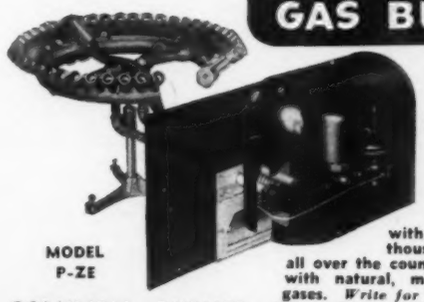
MODEL P-ZE
Tamper-proof controls, quiet operation, high efficiency, easy installation, positive performance and negligible service requirements—these are the features that have made Columbia NU-TIPE Ductless Gas Burners so popular with scores of Utilities and thousands of home owners all over the country. Performs perfectly with natural, manufactured or mixed gases. *Write for literature.*
COLUMBIA BURNER CO., Dept. A, Toledo, Ohio

*Petroleum Resources**

As in the case of Germany, whose petroleum resources have been the subject of many articles, a question immediately raised by the war with Japan is that of the petroleum resources of that nation, says The Independent Petroleum Association of America.

Naturally, little has been revealed by Japan in recent months concerning her supply, but the assumption can safely be made that Japan must by conquest of arms acquire petroleum stores and oil fields or face steadily decreasing supply. Her present storage is the unknown factor. What is known is that the current supply from fields now in her possession is small.

Within the Japanese Empire including the island of Taiwan, or Formosa, are some small fields. The total production for 1940, according to the United States Bureau of Mines was 2,639,000 barrels. To the north is the island of Sakhalin, the north half of which is owned by Russia and the south half by Japan. Principal oil production on this island is in the Russian-owned part, but the fields are operated by a Japanese concessionaire under an agreement made long ago. The oil production for Sakhalin in 1940 was estimated by the Bureau of Mines as 4,000,000 barrels. It is unlikely, in view of what is known of the potentialities of fields controlled by Japan, that the production has been increased over the 1940 figure. It had varied little over a five-year period—less than one million barrels gain in 1940 against the total for 1936. The fields are old and little new discovery has been made in years.

The oil production owned by Japan, therefore, is far below the needs. An estimate by a group of authorities early this year published in the annual petroleum volume of the American Institute of Mining and Metallurgical Engineers was that exclusive of military uses Japan consumed 26,000,000 barrels of petroleum and substitutes in 1940. Some other authorities raise this to 40,000,000 barrels annually by estimating military needs.

Japan produces and uses certain gasoline substitutes, alcohol and coal derivatives. It was estimated that the 1940 production of these fuels was 4,500,000 barrels. Adding that quantity to the combined production of crude oil from fields of Japan and Sakhalin Island the total is 10,539,000 barrels—approximately one fourth the estimated annual needs.

It is considered to be likely that Japan's production of synthetic fuels have been increased this year, as there have been reports of new plant construction to make motor fuel from coal, but it is not probable that such increase has been sufficient to alter the ratio of supply to needs in view of the greatly expanded war uses.

Japan has always been an importer of petroleum. Supplies came from the Dutch East Indies and the United States. Shipments from the United States ceased last July and little if any oil has been exported to Japan by the Dutch East Indies for some weeks.

During this period of no imports it is obvious that there has been no opportunity to increase stores of motor fuel and other petroleum products in Japan. The assumption is that heavy drawing on the storage must have been going on. Japan, unlike Germany, has seized no territory containing stored petroleum in consequential amounts.

Oil production available to the United States and her allies in this theater of the war is substantial. Production from the Dutch East Indies totaled 60,830,000 barrels in 1940 and that from British fields in the East Indies was 7,047,000 barrels. Included in available petroleum in this area is that of Burma, 7,979,000 barrels and of India, 2,250,000 barrels, all 1940 figures. The total from British and Dutch possessions in this part of the world was 78,110,000 barrels for the year.

Australia and New Zealand have negligible production of oil, none is produced in the Philippine Islands.

*From *Bulletin of Independent Petroleum Assn. of America, Tulsa, Okla.*

Dresser Acquires Bovaird and Seyfang Manufacturing Company

Of prime interest to the oil and gas industry is the announcement by Dresser Manufacturing Company of the acquisition of Bovaird and Seyfang Manufacturing Company of Bradford, Pennsylvania, as a wholly-owned subsidiary.

The chief motive in acquiring Bovaird and Seyfang was to obtain extra manufacturing capacity for Clark Bros. of Olean, a Dresser subsidiary, whose potential business during the period of the war boom is far in excess of its manufacturing capacity. Bovaird and Seyfang has manufacturing facilities of 147,000 square feet of plant and buildings, equipped with heavy machine tools, a boiler shop, and grey iron foundry, all of which are useful adjuncts that should enable Clark Bros. Co. not only to speed delivery of engines to the Maritime Commission but also to accept any additional business that may be available in its own field—the oil and gas industry.

Bovaird and Seyfang was founded in 1874 as a forge shop manufacturing oil and gas field equipment. Until 1920, its chief activities were the manufacture of steam engines and boilers. Today its main products, sold almost entirely in the Bradford field, are gas engines, Diesel engines, gear and band wheel pumping powers, drilling and fishing tools, tanks and pumping jacks. These products, together with a line of popular gas and oil well supplies, are and will continue to be distributed through their one local store in Bradford.

A. J. Smith Active in Improving Gas Properties

Arthur J. Smith has recently spent several months at Winchester, Va., in the management and improvement of the gas property there for the Consumers Utilities Company. Changes were made in the manufacture, purification and distribution system. He is at present located at 5130 Dorchester Street, Chicago.

Public Utility Trucks

Public Utility Trucks will be an important factor in the defense program, and Interstate Commerce Commissioner John L. Rogers is heading up the Central Motor Transportation Committee, a part of the Transportation Division of the Advisory Commission to the Council of National Defense. The Motor Committee will formulate and execute plans for the efficient and economical use of highways and commercial vehicles.

Its members will cooperate with government agencies and those furnishing or using transportation facilities in promoting national defense, to assure sufficiency of commercial motor vehicles to meet the needs of National security.

Chairman Rogers has established sixteen regional committees to facilitate the work of the Central Motor Transportation Committee, and the utility representatives of the sixteen districts are as follows:

Region 1—J. A. Herlihy, Edison Electric Light Co., Boston.

Region 2—R. H. Clark, Consolidated Edison, Inc., New York.

Regian 3—Lynn Edsall, Philadelphia Electric Co., Philadelphia.

Region 4—S. G. Page, Philadelphia Co., Pittsburgh.

Region 5—Jean Y. Ray, Virginia Electric & Power Co., Richmond.

Region 6—R. Whitfield, Georgia Power Co., Atlanta.

Region 7—F. B. Penick, Southern Bell Tele. and Tele. Co., Nashville.

Region 8—G. D. Gilbert, Illinois Bell Telephone Co., Chicago.

Region 9—G. E. Loughland, Northern States Power Co., Minneapolis.

Region 10—R. J. Collins, Kansas City Power & Light Co., Kansas City.

Region 11—S. M. Sharp, Southwestern Gas & Electric Co., Shreveport.

Region 12—Ben Smith, Southwestern Bell Telephone Co., San Antonio.

Region 13—F. T. Parks, Public Service Co., Denver.

Region 14—B. A. Barickman, Mountain States Tele. and Tele., Billings.

Region 15—G. H. Keiburtz, Puget Sound Power & Light Co., Seattle.

Region 16—P. H. Ducker, Southern California Edison Co., Los Angeles.

Utility motor transportation officials throughout the United States will be requested to contact their regional representatives who will exchange information on all forms of motor transportation shortages, congestions, delays in shipments, scarcity of parts and the effect of priorities affecting production of trucks, buses and their repair parts. The War Department has also urged this committee to facilitate the completion of the recent Bus and Truck Census.

In this way the motor transportation branch of the utility industry can present a united front in its support of national defense.

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Gas Appliance Servicing Manual

A Particularly Timely and Valuable Contribution to the Gas Industry by Boston University and The New England Gas Association

PREPARED as a handbook for gas service and repair men and written so directly and simply that anyone with high school education should readily understand it, this new manual covers the general field of domestic gas appliances and utilization so thoroughly that it should be of at least equal value to the engineer.

This matter of appliance servicing has become more and more important during the past ten years. As competition has become keener, the cruder and less efficient types have given way to modern designs, using less gas but requiring far more careful adjustment. The problem of training men to service such appliances has been correspondingly increased.

With our entry into the war and the consequent restrictions on appliance production and necessary changes in gas company personnel, the training of service and repair men has become a problem of first importance. This manual thus appears at a time when the need for it is particularly great.

Original plans for the preparation of this work were made more than two and a half years ago as a result of the keen interest in the subject displayed by members of The New England Gas Association. In 1939, five committees of the Association were appointed to study appliance servicing; and one of these, the Contact and Job Training Committee, undertook and thereafter devoted a large amount of time to the manual.

The Committee secured the working cooperation of Professor Osborne B. Tabor of Boston University College of Business Administration, who consulted with the Committee and prepared the tentative drafts of the text material.

The result is a book of over 250 pages, with many tables and illustrations, covering such subjects as gas manufacture, distribution and metering; chemistry of combustion; heat, —its generation, transfer and use in gas appliances; things to know about burners, including a discussion of orifices mixing tubes, burner ports and adjustments; pilots, cocks, regulators and automatic controls; water heaters and water heating, and space heating.

Commercial and industrial appliances and gas refrigeration are not covered.

Originally undertaken primarily for the benefit of the membership of The New England Gas Association, the outside interest in this work has been so great that the publication has been made generally available through Boston University College of Business Administration, 685 Commonwealth Avenue, Boston, Massachusetts, to which any inquiries should be addressed.

"The Job To Do in '42"

Theme of United Gas Regional Meeting

By
W. D. Fore
Houston, Texas

United Gas Corporation of Houston, Tex., held a two-day regional meeting at the Rice Hotel on January 19 and 20, using as its theme "The Job To Do In '42." Of the 24 related subjects discussed by officials of the company, all were closely tied to an all-out program of complete and energetic co-operation with the Government during the emergency. As a result of the conference, three hundred district managers and key employes went back to their respective areas, sleeves rolled up, equipped to do their utmost in helping to win this war.

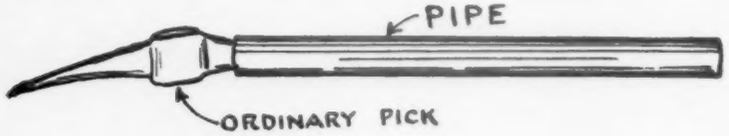
The cover design of the program folder—in red, white and blue—presented a large V, beneath which was the Morse telegraph code for this letter, . . . —. Three headlines running through the letter V read, Serve Our Country, Serve Our Customers, Serve Our Company. Mr. J. V. Strange, vice-president and general manager of United Gas Corporation, was the principal speaker at the two-day conference. Among those assisting him were Mr. H. P. Carroll, operating manager; Mr. K. L. Simons, vice-president and district manager of the Houston Division; and Mr. D. A. Strickland, general sales manager.

High lights of the company's 1942 strategy call for (1) a winning of the war; (2) the utmost in conservation of materials needed by the defense industries; (3) an educational campaign urging both commercial and home users of gas to keep existing appliances in repair and to revamp old and seemingly worn out equipment which cannot be purchased anew from manufacturers; (4) closest supervision in the matter of getting the longest possible wear from automobiles and tires; (5) protection of company property and equipment against bombing attacks; keeping plants in normal operation during air raids; and means of restoring service in the event of enemy bombings; (6) division of the company's regional organization into 12 areas, or districts, after the pattern used in civilian defense, and with the approval of the defense authority, each company area having its individual area defense chief.

"Natural gas service," Mr. Strange told his co-workers, "will be called upon to play a most important part in contributing to the defense of our country, in the production of war equipment and in providing public health and safety to our civilian population."

Mr. Strange told the 300 district managers and key employes that the company has an adequate supply of natural gas available for all present customers and all additional customers for the duration of the war. However, he said, the extent of the facilities during wartime must be limited largely to those for defense, public health, and safety.

"It has been stated," he remarked, "that 18 civilians will be required to carry on the work at home that is essential in support of each man in the armed forces during the course of this war. The job of our organization is to provide an adequate natural gas service to a substantial group of this large civilian population in order that they may be able to carry on the job of supporting the men who are engaged in actively waging war against our enemies."



HOW TO SWING A PICK IN CRAMPED SPACE

Don't swing the pick at all. When there isn't sufficient room—and there often isn't—remove the pick head and slip it into a pipe as indicated in the sketch herewith. You are then ready to go ahead. You can get into almost "any corner" with an improvised pick of this kind. — *W. F. Schaphorst*

Workers in Industrial Plants Told What to Do In An Air Raid

The plant protection division of the Office of Civilian Defense December 29 issued the following instructions for workers in industrial plants as to their conduct in the event of an air-raid:

1. Keep working until our air-raid alarm is sounded.
2. Take cover.
3. Keep cool and help others to keep cool.
4. Don't phone or shout—listen to your air-raid warden.
5. If you have a plant defense post, take that position at the sound of the alarm.
6. Others continue their usual tasks until the air-raid wardens give the signal to take temporary shelter.
7. Take the necessary safety measures for your machine and tools.
8. Do not show lights.
9. Fight incendiary bombs. Conflagrations are avoided by controlling such bombs at once.
10. Remain "alert" in the prescribed safe place until the "all clear" signal is given and then return to work.
11. Remember that this is a war of production and that production must continue. Your plant is taking every precaution for your safety.

Most gas companies have prepared and issued detailed instructions to their employees which are more directly applicable than the above. It is desirable to review those general instructions, however, to make sure that nothing has been omitted.

Centrifugal Compressors. In a new 20-page catalog No. 458, profusely illustrated with installation photographs in a wide variety of plants, B. F. Sturtevant Co., Hyde Park, Boston, Mass., describes its latest designs in large-volume, high-pressure centrifugal compressors. Starting with a survey of basic principles, the catalog covers all important phases in design, construction and application.

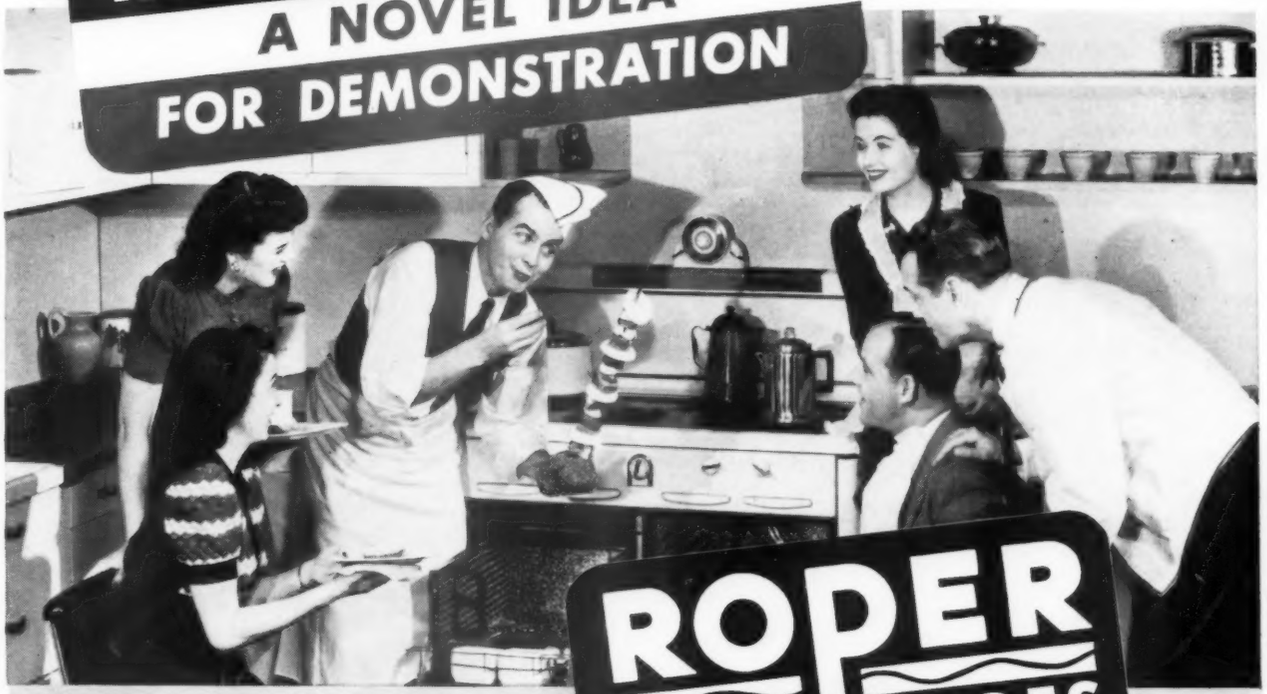
Ranges. With the slogan "Roper and You for '42," a large portfolio has been issued by George D. Roper Corporation of Rockford, Ill.

In addition to an analysis of sales activities and sales helps available during the current year, it illustrates construction details of the many types of Roper ranges. Advertising aids, displays and poster material available are fully described and illustrated.

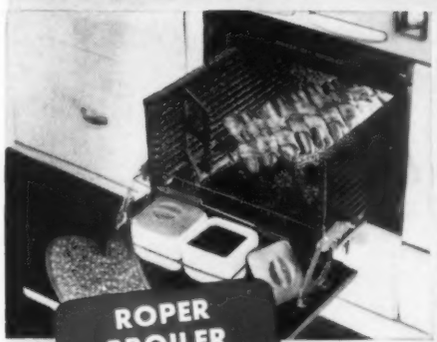
HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

A Picnic in Your Kitchen

A NOVEL IDEA FOR DEMONSTRATION



ROPER GAS RANGES



ROPER BROILER BAR-B-Q

Complete with PIC-NIC-KIT

The new Roper Broiler "Bar-B-Q" with "Pic-Nic-Kit" offers unlimited opportunities for demonstration.

The "Bar-B-Q" consists of a long skewer that will hold two 2½-pound chickens or a large ham . . . plus a skewer support that makes it easy to turn the meat or fowl every few minutes.

The "Pic-Nic-Kit" is composed of colorful asbestos mitt, basting spoon, large fork, dishes for your favorite relishes, etc.

The "Glo" Broiler Burner, used with "Bar-B-Q" and "Pic-Nic-Kit," provides a penetrating infra-red heat ideal for barbecuing.

Here is an idea that will instantly appeal to your prospects. Write for complete information. Use the "Picnic in Your Kitchen" on your display floor, before special groups, in the home. Take advantage of this new way to romance barbecuing—an idea that is catching hold like wildfire.

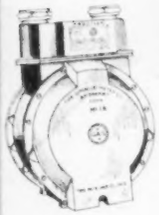
★ ★ ***Buy Defense Bonds*** ★ ★

GEO. D. ROPER CORPORATION

GENERAL SALES OFFICE AND PLANT: ROCKFORD, ILLINOIS

ROPER GAS RANGES FOR ALL GASES INCLUDING (LP) LIQUEFIED PETROLEUM GAS

A Message . .



THE SPRAGUE METER CO.

MANUFACTURERS OF

CAST IRON GAS METERS
AND GAS REGULATORS

BRIDGEPORT, CONN

CABLE ADDRESS
SPRAGUE
CODE A B C.
WESTERN UNION

To Our Customers:

We face the New Year's tasks as we have for more than forty years, through peace and through war - determined to do our utmost to serve our customers, although we realize fully that conditions will be difficult.

As always, we will endeavor to better our service to supply the wants of our customers, keeping in mind of course that we must aid in every way possible to help win the War - realizing that war can't be an inferno on the battleline and heaven on the home front.

In face of the gigantic task ahead of us we must tighten our belts, pool our ideas, economize where we can and believe that this period of uncertainty thru which we are passing will be the crucible from which we all may emerge scarred but nevertheless greater for having passed through it.

Yours very truly,
THE SPRAGUE METER CO.

E. L. Fairchild.

President